

From: Cathy Tortorici - NOAA Federa
Subject: ON EPA, FWS, and USDA contacts for the RFS
To: Burch, Juia
Cc: Anderson, Brian; Johnson, Hope; Matuszko, Jan; Nesci, Kimberly; Perry, Tracy; Reaves, Eissa; Suarez, Mark; Craig_Aubrey@fws.gov; Kunickis, Sheryl - OSEC
Sent: January 7, 2021 1:54 PM (UTC-05:00)

Julia -

I spoke to the managers we work with at EPA/FWS/USDA on our pesticides work at our most recent weekly meeting about our call yesterday.

Here are the folks to contact with questions about crop data/useage from EPA.

Craig will be your contact at FWS.

Sheryl Kunickis of USDA said that USDA is involved in the RFS and they also have data that they share with EPA and us on crop data, so she wanted to be included as well.

Talk to you soon -

Cathy T.

--

Cathy Tortorici
Chief, ESA Interagency Cooperation Division
Office of Protected Resources
NOAA's National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910
(w) 301.427.8495
(c) 301.602.2193
cathy.tortorici@noaa.gov

From: Cathy Tortorici - NOAA Federa
Subject: Re: On getting together to talk about the RFS program
To: Burch, Julia
Sent: January 7, 2021 6:08 PM (UTC-05:00)

Sounds good

Sent from my iPhone

On Jan 7, 2021, at 5:37 PM, Burch, Julia <Burch.Julia@epa.gov> wrote:

I haven't heard from FWS. Let me reach out to them tomorrow to see if they want to join our next meeting (or would prefer a separate intro one) and then we can go from there.

Sound ok?

From: Cathy Tortorici - NOAA Federal <cathy.tortorici@noaa.gov>
Sent: Thursday, January 7, 2021 1:57 PM
To: Burch, Julia <Burch.Julia@epa.gov>
Subject: On getting together to talk about the RFS program

Julia -

Before I get our times together - did you want to send out a google poll and invite EPA/FWS to that meeting as well?

If not, I will get you some times from my staff for availability in the next few weeks.

Cathy T.

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From: Burch, Julia
Subject: RE: On getting together to talk about the RFS program
To: cathy.tortorici@noaa.gov
Sent: January 7, 2021 5:37 PM (UTC-05:00)

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Subject: On getting together to talk about the RFS program

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cathy.tortorici@noaa.gov

From: Burch, Julia
Subject: RE: ON EPA, FWS, and USDA contacts for the RFS
To: Kunickis, Sheryl - OSEC; cathy.tortorici@noaa.gov
Cc: Hohenstein, William - OCE, Washington, DC; Meyer, Seth - OCE, Washington, DC; Hengst, Benjamin
Sent: January 7, 2021 5:34 PM (UTC-05:00)

Thanks Sheryl and Cathy for making the connection.

The RFS world must be small because I know Bill and Seth as we have worked on a few RFS issues together over the years. And I can confirm that OTAQ also gets our cropland data from USDA already. But its good to reaffirm that we are working with right partners at USDA.

Bill, if you'd like to talk more on our Friday call, that works for me. As we shared with NMFS yesterday, we are still in the early info gathering phase but I am happy to discuss further.

Thanks!

From: Kunickis, Sheryl - OCE, Washington, DC <sheryl.kunickis@usda.gov> **On Behalf Of** Kunickis, Sheryl - OSEC
Sent: Thursday, January 7, 2021 4:24 PM
To: cathy.tortorici@noaa.gov; Burch, Julia <Burch.Julia@epa.gov>
Cc: Hohenstein, William - OCE, Washington, DC <william.hohenstein@usda.gov>; Meyer, Seth - OCE, Washington, DC <Seth.Meyer@usda.gov>
Subject: Re: ON EPA, FWS, and USDA contacts for the RFS

Hi Cathy and Julia,

Thank you for connecting us. The contacts for the RFS for USDA are:

- William Hohenstein
- Dr. Seth Meyer

I have cc'd them on this email for convenience.

Thanks,

Sheryl

From: Cathy Tortorici - NOAA Federal <cathy.tortorici@noaa.gov>
Sent: Thursday, January 7, 2021 1:53 PM
To: Burch, Julia <Burch.Julia@epa.gov>
Cc: Anderson, Brian <anderson.brian@epa.gov>; Johnson, Hope <johnson.hope@epa.gov>; Matuszko, Jan <matuszko.jan@epa.gov>; Nesci, Kimberly <nesci.kimberly@epa.gov>; Perry, Tracy <perry.tracy@epa.gov>; Reaves, Elissa <reaves.elissa@epa.gov>; Suarez, Mark <suarez.mark@epa.gov>; Craig_Aubrey@fws.gov <craig_aubrey@fws.gov>; Kunickis, Sheryl - OSEC <Sheryl.Kunickis2@usda.gov>
Subject: ON EPA, FWS, and USDA contacts for the RFS

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The Renewable Fuel Standard Program

February 2021

Overview



Fuels Provisions in the Clean Air Act



RFS Basics



Annual RFS RVO Rules
(renewable volume obligation)



Small Refinery Exemptions



Current activities

The Clean Air Act and Fuels

- Within OAR, the Office of Transportation and Air Quality (OTAQ) has responsibility for implementing vehicle and fuel programs under the Clean Air Act
- Sections 202 – 210, 213-217, 219 of the Act relate to vehicles and engines
- Section 211 of the Act provides EPA with the authority to regulate fuels
 - Many parts, including 211(o), which establishes the RFS program, are Congressional mandates
- Examples of fuel regulations from past 40+ years
 - Prohibition on lead in motor gasoline
 - Limitations on sulfur levels in gasoline and diesel
 - Limitations on toxics (e.g., benzene) in gasoline
 - The Renewable Fuel Standard (RFS) program
- The fuels sector: large, decentralized, many stakeholders, very dynamic

Implementing the RFS Program

- Statute directs EPA to implement the RFS program
 - Provides key consultation roles for USDA, DOE
- EPA finalized “RFS 1” program regulations in 2007 (implementing EPCA 2005), and “RFS2” regulations in 2010 (implementing EISA 2007)
- RFS provisions of the Clean Air Act require that transportation fuel contains specified volumes of renewable fuels
- Current status: EPA is actively implementing the program
 - Annual rulemakings to put in place each set of standards as required by law
 - Regulatory program adjustments to respond to an evolving market
 - Significant compliance and enforcement activities
 - Ongoing approval processes for new renewable fuels entering the marketplace, including GHG lifecycle assessments
 - Rules and actions are regularly litigated
- High visibility program, requires very hands-on management

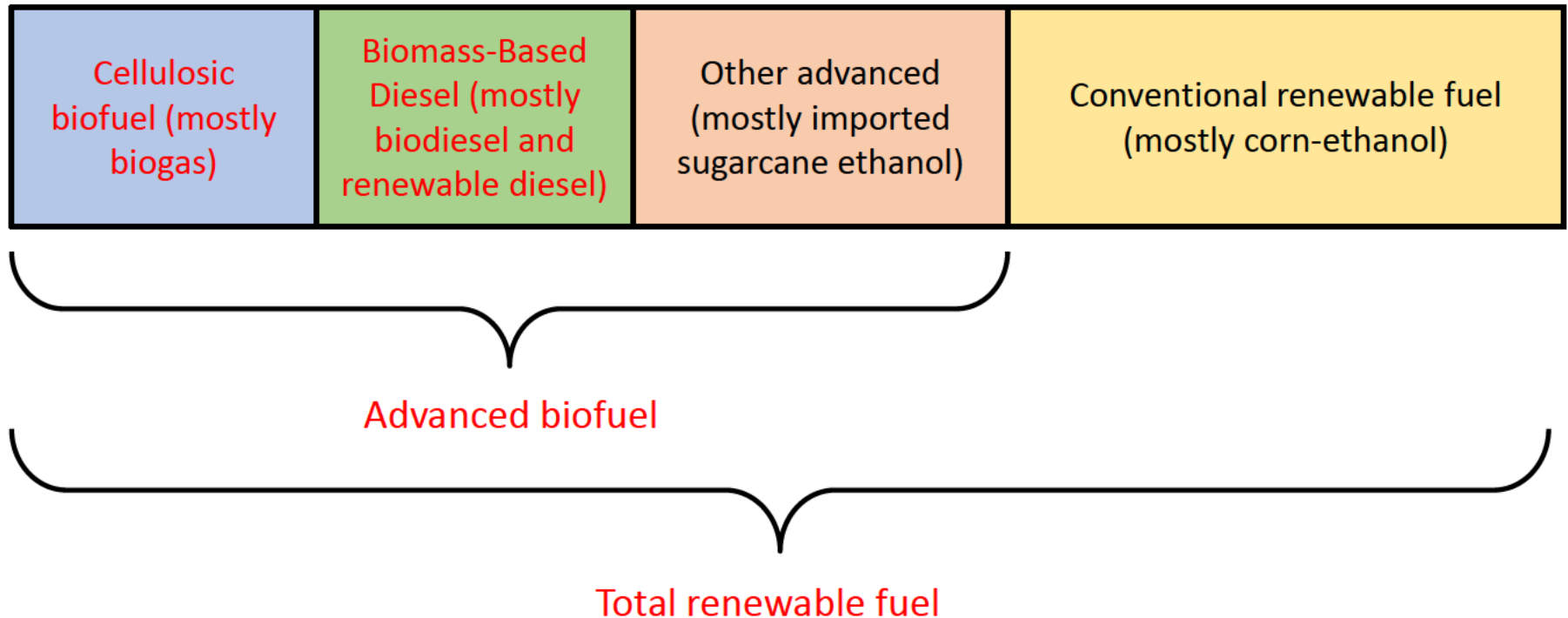
People

- EPA staff: cross-divisional team within the Office of Transportation and Air Quality and outside of OAR
 - Regulatory analysis supporting development of the annual standards
 - Economic and lifecycle analysis
 - Environmental impact analysis
 - RFS program compliance
 - Office of General Counsel
 - Enforcement and Compliance Office
- Significant engagement with external stakeholders, both within federal government (USDA, DOE, DOJ) and with states, industry, etc.
- Well-organized stakeholder groups with widely varying perspectives
 - Biofuel producers and agricultural producers; gasoline and diesel refiners and importers; fuel retailers and marketers; consumer/environmental/anti-hunger groups; states; Hill

Four Renewable Fuel Categories (statutory)

Renewable Fuel Category	Example of Qualifying Renewable Fuel	Minimum GHG Lifecycle Emissions Reduction (relative to 2005 baseline)
Cellulosic	Biogas from landfills, etc. Ethanol, gasoline or diesel from corn stover, switch grass, tree residues, etc.	60%
Biomass-based diesel	Biodiesel and renewable diesel from soy, canola, waste oils	50%
Advanced biofuel	Ethanol from sugarcane, most biodiesel/renewable diesel	50%
Renewable fuel	Ethanol from corn starch, biodiesel from palm oil	20% (unless grandfathered)

Interaction Between the Four Standards



- Items in **red** are the fuel categories for which standards are set
- Note that there is no standard for conventional renewable fuel

Statutory Volumes

In billion gallons

	Cellulosic biofuel	Biomass-based diesel	Advanced biofuel	Total renewable fuel	"Conventional" (total renewable minus advanced)
2009	na	0.5	0.6	11.1	10.5
2010	0.1	0.65	0.95	12.95	12
2011	0.25	0.8	1.35	13.95	12.6
2012	0.5	1	2	15.2	13.2
2013	1	a	2.75	16.55	13.8
2014	1.75	a	3.75	18.15	14.4
2015	3	a	5.5	20.5	15
2016	4.25	a	7.25	22.25	15
2017	5.5	a	9	24	15
2018	7	a	11	26	15
2019	8.5	a	13	28	15
2020	10.5	a	15	30	15
2021	13.5	a	18	33	15
2022	16	a	21	36	15

a: statute sets 1b gal minimum, but EPA may raise requirement

Fuel Pathways

- For a fuel to generate RINs and be used in the program, EPA must first determine that it qualifies under the statute and regulations
 - Feedstock must, for example, meet definition of “renewable biomass”
 - Fuel must also meet statutory thresholds for lifecycle GHG emission reductions relative to petroleum baseline
- EPA conducts lifecycle GHG analyses for fuel pathways, including looking at significant indirect impacts. A fuel pathway is a specific combination of three components: (1) feedstock, (2) production process and (3) fuel type. Example of a fuel pathway: ethanol produced from corn starch oil using a dry mill process
- EPA has already approved multiple fuel pathways under the program, under all four categories. See <https://www.epa.gov/renewable-fuel-standard-program/approved-pathways-renewable-fuel>
- Advanced pathways already approved include ethanol made from sugarcane; cellulosic diesel; cellulosic ethanol made from corn stover; and others.
- Many companies continue to petition EPA to approve new pathways, many made with advanced technologies or with new feedstocks. See <https://www.epa.gov/renewable-fuel-standard-program/pending-petitions-renewable-fuel-pathways>

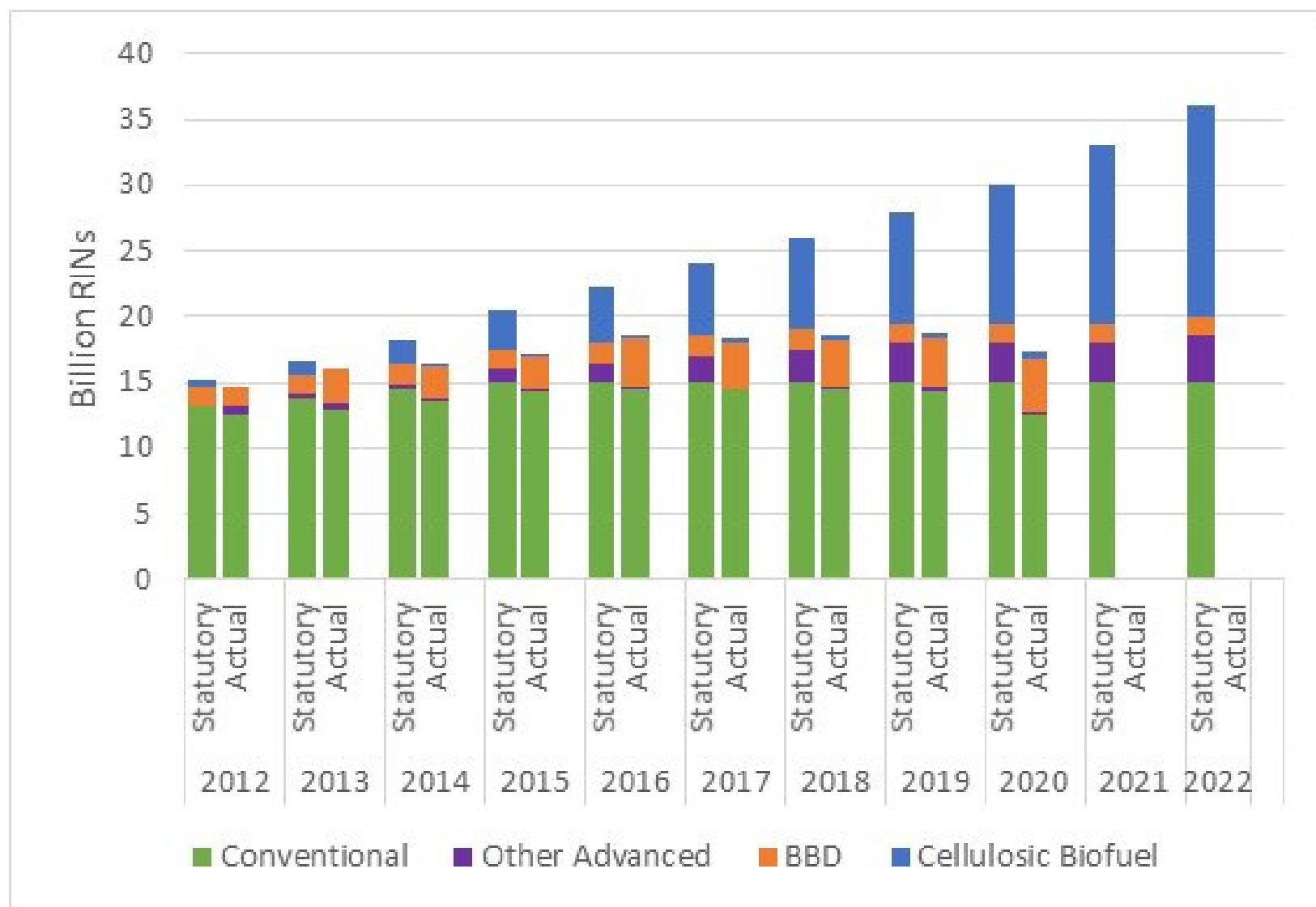
Compliance Basics

- Obligated Parties are refiners or importers of gasoline or diesel
- The volumes are converted into 4 different percentages for each standard -- obligated parties must demonstrate compliance with that percentage standard each year
- Obligated Parties must obtain sufficient RINs (Renewable Identification Numbers) for each category in order to demonstrate compliance
 - RIN = compliance “credit” for the program; Different RINs (D-Codes) for each type of fuel
 - RINs are generated when a producer makes a gallon of renewable fuel
 - RINs are commodities that are tradable
 - Obligated parties can buy biofuel with RINs attached, or buy separated RINs on the market
 - After each calendar year, obligated parties retire RINs to EPA to demonstrate compliance
 - The RIN enables obligated parties to comply without physically producing, blending, or selling the renewable fuel themselves, allowing the marketplace to be more efficient
 - (b) (5)
- Program also has other provisions allowing for flexibility in compliance (RIN carryover; deficit carry forward)
- EPA publishes data on RIN generation and compliance online
 - All RIN transactions must be logged with EPA through an electronic system (EMTS)
 - Ongoing efforts to enhance data transparency of program

Annual Volume Rules

- The CAA requires EPA to set the RFS volume requirements annually, in the form of a percentage standard
 - The volume requirements are to be based on the statutory targets, but EISA in some cases requires, and in other cases authorizes, EPA to adjust the volume requirements using waiver authorities in statute
 - EPA bases the % standards on EIA projections of gasoline / diesel consumption for the next year
 - In 2020 EPA began projecting SRE exemptions when calculating the % standards
- Standards are set through a notice-and-comment process
 - Provides opportunity for public comment and stakeholder engagement (hearings)
 - EISA requires the standards be finalized by November 30th of the year preceding the compliance year
- The Clean Air Act specifies differing requirements for how the different standards are set
 - For example, the CAA explicitly requires that cellulosic standard be set on a projection of availability. This differs from statutory language relating to the other standards (e.g., advanced, biodiesel.)

Statutory goals versus actual volumes



RIN Prices (OPIS Data)



More Recent RIN Prices Data (OPIS)



Small Refinery Exemptions

- The statute established “temporary” exemptions from RFS volume obligations for small refineries (< 75,000 crude barrels per day)
 - Statutory (EPA/EISA) exemption for all small refineries through 2010
 - Extension possible for 2011-2012 based on DOE study
 - Since then, refineries may petition EPA annually for extension of the exemption
 - 10th Circuit ruled that extensions must be continuous; this is now before the Supreme Court
 - Note: small *refineries* are different from small *refiners*; many small refineries are actually owned by large refiners (e.g., Andeavor, Chevron, Exxon, Phillips 66)
- EPA may grant an extension if it finds that the petitioning small refinery will suffer “disproportionate economic hardship” from complying with its RFS obligations
 - Statute does not define disproportionate economic hardship
 - 10th Circuit clarified that the economic hardship must be due to the RFS
- The statute directs EPA to consult with DOE, consider the DOE study and other economic factors, but authority and responsibility for decisions resides with EPA
 - EPA shares all financial information it receives from petitioners with DOE and DOE (b) (5)
[REDACTED]
 - (b) (5) [REDACTED]

Small Refinery Exemption data (from website, as of 1/20/21)

Table 1: Exempted Volume of Gasoline and Diesel Each Compliance Year...

Compliance Year	Estimated Volumes of Gasoline and Diesel Exempted (million)	Estimated Renewable Volume Obligations (RVO) Exempted (million)
2011	n/a	n/a
2012**	n/a	n/a
2013	1,980	190
2014	2,300	210
2015	3,070	290
2016	7,840	790
2017	17,050	1,820
2018	14,420	1,540
2019	1,390	150
2020	0	0

Table 2: Summary of Small Refinery Exemption Decisions Each Compliance Year *

Compliance Year	Number of Petitions Received	Number of Grants Issued	Number of Denials Issued	Number of Petitions Declared	Number of Petitions Withdrawn	Number of Pending Petitions
2011	42	24	13	3	0	2
2012	41	23	13	3	0	2
2013	30	8	18	0	1	3
2014	28	8	16	0	0	4
2015	28	7	17	1	0	3
2016	29	19	7	0	1	2
2017	37	35	0	0	1	1
2018	44	32	4	2	3	3
2019	32	2	0	0	0	30
2020	15	0	0	0	0	15

Current activity (as of February 2021)

- Decision on 2019 and 2020 SRE petitions
- 2021 and 2022 Annual Volume Rules
 - Sets volumes for 2021 and 2022
 - Could also include reconsideration of 2020 volumes
 - Target for proposal issuance: June 2021
 - Target for final rule: November 30, 2021
- 2016 Remand response
- “Set” rule to establish RFS volumes for 2023+
 - Target for proposal issuance: (b) (5)
 - Target for final rule: (b) (5)
- eRINs and other pathway/registration determinations

Additional Materials



The E10 Blendwall

- E10 (gasoline with up to 10% ethanol) can lawfully be used in all vehicles and engines designed to operate on gasoline.
- 100% utilization of E10 as gasoline in the US has typically been referred to as the “blendwall”
- To blend additional ethanol beyond 100% utilization of E10 will require the manufacture and sale of higher ethanol blends like E15 and E85.
- Currently there are infrastructure and other limitations on the volume of E15 and E85 that can be consumed in the US.
 - Retail: ~3,500 retail stations currently equipped to dispense E85 and 2,300 for E15
 - Vehicles: Only certified Flex Fuel Vehicles (FFVs) can lawfully use E85. There are approximately 10 -12 million FFVs on the road today but they fill on E85 <1% of the time. EPA has prohibited the use of E15 in MY2000 and older vehicles and all non-road vehicles and engines.
 - Comparatively little E15 being sold

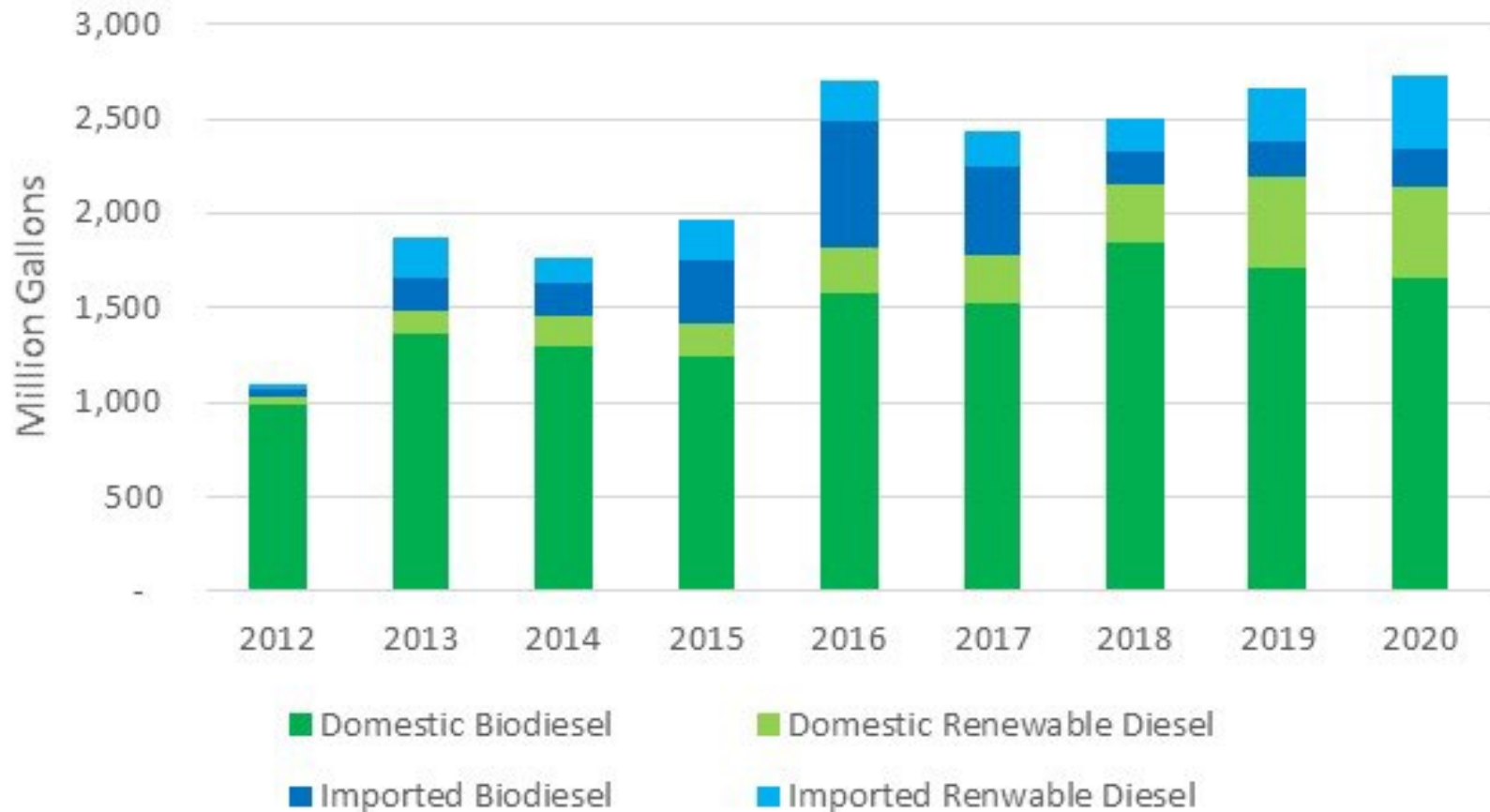
The E10 Blendwall (Cont.)

- E10 blendwall varies with gasoline demand
 - E10 blendwall was approximately 14.3 and 12.4 billion gallons in 2019 and 2020 respectively
 - E10 blendwall is projected to be 13.3 and 13.8 billion gallons in 2021 and 2022 respectively
- Consequently, ethanol cannot meet the 15 billion gallon conventional biofuel volume
 - Even if all new/rebuilt service stations every year were made E15 compatible, the increased volume would be at approximately 150 mgal
- For the last 3+ years, biodiesel, including palm biodiesel from Malaysia/Indonesia, has increased to fill the void

Volume Waivers/Adjustments

- Statute provides authority to adjust volumes set by Congress as part of annual rule process
 - Cellulosic waiver authority
 - Must Reduce the cellulosic volume to the projected actual production
 - Must take “neutral aim at accuracy” in determining production
 - May reduce advanced and total standards by up to the same amount
 - General waiver authority
 - Allows the Administrator to waive the RFS volumes, in whole or in part, based on a determination that implementation of the program would severely harm the economy or environment of a State, a region, or the United States; or based on inadequate domestic supply
- We have used both authorities in past rules
 - Cellulosic authority every year to lower the cellulosic standard
 - Cellulosic authority for 2014-20 to lower the advanced and total standards
 - General authority for 2014-16 to further lower the total standard
 - Use of general waiver authority vacated by court for 2016 standard.
- We have also denied petitions for waiver (requests in 2008, 2012, 2016)

Biodiesel and Renewable Diesel Production and Imports



From: Burch, Julia
Subject: EPA-NMFS-FWS: Reconnecting on TA for RFS
To: Burkholder, Dallas; Machiele, Paul; Michaels, Lauren; Korotney, David; Li, Ryland (Shengzhi); Hambright, Rosemary; cathy.tortorici@noaa.gov; Nancy Brown-Kobil - NOAA Federal; Aubrey, Craig; Keith Paul; Karen Myers
Sent: January 26, 2021 10:48 AM (UTC-05:00)

Hello!

As you may know, on Jan 6 EPA and NMFS had a discussion about picking up our TA conversations from a few years ago. At that meeting we decided to start off with a RFS 101 to refresh everyone on the basics of the RFS program and some recent thinking EPA has been doing internally about ESA obligations. Since EPA expects to work with both FWS and NMFS on these issues, it seemed sensible to invite everyone to this next conversation.

Materials coming soon.

If you have any questions or concerns, please reach out to me.

Thanks!

Regards,

Julia Burch
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
202-564-0961 (desk)
202-853-4701 (cell)
(Pronouns: she/her)

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Washington DC

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From: Cathy Tortorici - NOAA Federa
Subject: Fwd: Sierra Club July NOI
To: Tony Hawkes; Thomas Hooper - NOAA Federa; Ryan DeWitt - NOAA Federa; David Baldwin - NOAA Federa; Pat Shaw-A en
Sent: February 18, 2021 12:23 PM (UTC-05:00)
Attached: sc_noi_07142017.pdf

The lawsuit ...

----- Forwarded message -----

From: **Michaels, Lauren** <Michaels.Lauren@epa.gov>
Date: Wed, Dec 20, 2017 at 1:39 PM
Subject: Sierra Club July NOI
To: cathy.tortorici@noaa.gov <cathy.tortorici@noaa.gov>, daniel.pollak@noaa.gov <daniel.pollak@noaa.gov>
Cc: Burch, Julia <Burch.Julia@epa.gov>

The July 14, 2017 NOI from Sierra Club is attached.

Thanks,

Lauren

Lauren A. Michaels

Attorney-Advisor

Office of Transportation and Air Quality

U.S. Environmental Protection Agency

2000 Traverwood Dr

Ann Arbor, MI

734.214.4640

michaels.lauren@epa.gov

Please note that my email has recently changed. Please update your records with this email for future communications.

--

Cathy Tortorici

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cathy.tortorici@noaa.gov



July 14, 2017

VIA ELECTRONIC MAIL AND CERTIFIED MAIL, RETURN RECEIPT REQUESTED

Scott Pruitt, Administrator
USEPA Headquarters
1101A
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Ryan Zinke, Secretary of the Interior
Department of the Interior
1849 C Street, N.W.
Washington, DC 20240

Benjamin Friedman, Acting NOAA
Administrator
National Oceanic and Atmospheric
Administration
1401 Constitution Avenue, N.W.
Room 5128
Washington, DC 20230

Chris Oliver, Assistant Administrator for
NOAA Fisheries
1315 East-West Highway
Silver Spring, MD 20910

Greg Sheehan, Acting Director
U.S. Fish and Wildlife Service
1849 C Street, N.W.
Washington, DC 20240

**RE: NOTICE OF VIOLATIONS OF THE ENDANGERED SPECIES ACT IN CONNECTION
WITH THE ENVIRONMENTAL PROTECTION AGENCY'S APPROVAL OF
INCREASING VOLUMES OF RENEWABLE FUELS UNDER THE ENERGY
INDEPENDENCE AND SECURITY ACT'S RENEWABLE FUEL STANDARD**

Dear Sirs/Madams:

On behalf of Gulf Restoration Network and Sierra Club, I write to provide you with 60 days' notice of the U.S. Environmental Protection Agency's ("EPA") violations of Section 7 of the Endangered Species Act ("ESA"), 16 U.S.C. § 1536, and its implementing regulations, 50 C.F.R. Part 402.

By failing to initiate and complete consultation with the U.S. Fish and Wildlife Service ("FWS") or the National Marine Fisheries Service (NOAA Fisheries or NMFS) in taking several actions under the Energy Independence and Security Act's (EISA) Renewable Fuel Standard (RFS), including but not limited to: 1) setting annual volumetric standards for renewable fuels; 2) reviewing and approving new pathways for renewable fuels using new feedstocks and advanced technologies; and/or 3) exercising, or failing to exercise, its waiver authority, EPA has violated its procedural and substantive obligations under ESA Section 7(a)(2), 16 U.S.C. §

1536(a)(2), to insure that its action(s) is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat. Also, EPA has not used the best scientific and commercial data available in fulfilling the requirements of that paragraph. In addition, EPA is in violation of ESA §7(a)(1), 16 U.S.C. §1536(a)(1), by not carrying out its RFS program for the conservation of endangered and threatened species. The FWS and NMFS are likewise in violation of these sections of the ESA and its implementing regulations for not consulting with EPA on these matters, as set forth more fully below.

If the statutory violations described herein are not promptly and diligently rectified within the 60-day period commencing with receipt of this letter, Sierra Club and Gulf Restoration Network intend to file suit in federal district court to seek appropriate legal and equitable remedies. This notice is provided in fulfillment of the requirements of the citizen suit provision of the ESA, 16 U.S.C. § 1540(g)(2)(A)(i).

I. LEGAL FRAMEWORK

A. THE ENDANGERED SPECIES ACT (ESA)

Congress enacted the Endangered Species Act in 1973 to provide for the conservation of endangered and threatened fish, wildlife, plants, and their natural habitats.¹ The ESA imposes substantive and procedural obligations on all federal agencies with regard to listed and proposed species and their critical habitats.²

Section 7 of the ESA and its implementing regulations require each federal agency, in consultation with the appropriate wildlife agency – here, the FWS and NMFS (hereafter “wildlife agencies”) – to insure that any action authorized, funded, or carried out by the agency is not likely to (1) jeopardize the continued existence of any threatened or endangered species or (2) result in the destruction or adverse modification of the critical habitat of such species. 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(a).

“Action” is broadly defined to include actions that may directly or indirectly cause modifications to the land, water, or air, and actions that are intended to conserve listed species or their habitat. 50 C.F.R. § 402.02. An action would “jeopardize the continued existence of” a species if it “reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.” *Id.* “Destruction or adverse modification” of critical habitat means “a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical.” *Id.*

¹ See *id.* § 1531. Congress defined “conservation” as “the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to [the Act] are no longer necessary.” *Id.* § 1532(3).

² See *id.* § 1536(a)(1), (a)(2), (a)(4); *id.* § 1538(a); 50 C.F.R. § 402.01.

For each federal action, the federal action agency – here, EPA – must request from the wildlife agencies a list of any ESA-listed or proposed species that may be present in the area of the agency action. 16 U.S.C. § 1536(c)(1); 50 C.F.R. § 402.12. “Action area” is defined by regulation to be broader than simply the project area: it means “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.” 50 C.F.R. § 402.02.

If the action agency determines that its proposed action will not affect listed species or critical habitat, it is not obligated to consult with wildlife agencies. 50 C.F.R. § 402.14. Effects determinations must be based on the sum of the direct, indirect, and cumulative effects of the action, added to the environmental baseline and interrelated and interdependent actions. *Id.* § 402.02 (defining “effects of the action.”). The threshold for triggering consultation is low: if the action agency determines that its proposed action may affect any listed species or critical habitat, it must engage in formal or informal consultation with the wildlife agencies. 50 C.F.R. §§ 402.13, 402.14; *see also Heartwood v. Kempthorne*, 302 Fed. Appx. 394, 395 (6th Cir. 2008).

To complete informal consultation, the action agency must determine, with the written concurrence of the wildlife agencies, that the action is not likely to adversely affect listed species or critical habitat. 50 C.F.R. § 402.13(a). If the action is likely to adversely affect listed species or critical habitat, the action agency and wildlife agencies must engage in formal consultation. *Id.* § 402.14. To complete formal consultation if the agency action is not likely to result in jeopardy or destruction or adverse modification of critical habitat, the wildlife agency must provide the action agency with a biological opinion, explaining how the proposed action will affect the listed species or habitat, together with an incidental take statement and any reasonable and prudent measures necessary to avoid jeopardy. 16 U.S.C. § 1536(b); 50 C.F.R. §§ 402.14(g)-(i). If the relevant wildlife agency, however, determines that the action is likely to jeopardize the species or result in the destruction or adverse modification of critical habitat, the agency “shall suggest those reasonable and prudent alternatives which [it] believes” would not result in jeopardy or adverse modification. 16 U.S.C. § 1536(b)(3).

The action agency also has a mandatory duty to confer with wildlife agencies on any actions that are “likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat.” 50 C.F.R. § 402.10(a). Although prior to final listing or final critical habitat designation, the conference opinion is advisory, not binding, the conference process “is designed to assist the Federal agency and any applicant in identifying and resolving potential conflicts at an early stage in the planning process.” *Id.*

Throughout the consultation process, the wildlife agencies must use “the best scientific and commercial data available” to evaluate the impacts the action will have on listed species and to provide its “biological opinion” whether, as a result of those impacts, the action is likely to result in jeopardy or destruction of critical habitat. 16 U.S.C. §§ 1536(a)(2) & (b)(3); 50 C.F.R. § 402.14(g). The action agency also has an independent obligation to “use the best scientific and commercial data available” under Section 7. 16 U.S.C. § 1536(a)(2).

Once the action agency has initiated consultation, Section 7(d) prohibits it from making “any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate [ESA Section 7(a)(2)]. 16 U.S.C. § 1536(d); 50 C.F.R. § 402.09.

Section 9 of the ESA prohibits any person, including any federal agency, from “taking” any listed species without proper authorization through a valid incidental take permit. 16 U.S.C. § 1538(a)(1)(B); 50 C.F.R. § 17.31(a) (extending the “take” prohibition to threatened species). The term “take” is statutorily defined broadly as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” 16 U.S.C. § 1532(19). The definition of “harm” has been defined broadly by regulation as “an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.” 50 C.F.R. § 17.3; *see also Babbitt v. Sweet Home Ch. Of Communities for a Great Oregon*, 515 U.S. 687 (1995) (upholding regulatory definition of harm). Courts have found federal agencies liable for unlawful take of listed species where agency-authorized activities resulted in the killing or harming of such species. *See, e.g., Defenders of Wildlife v. Adm’r, Env’tl. Prot. Agency*, 882 F.2d 1294 (8th Cir. 1989).

B. THE ENERGY INDEPENDENCE AND SECURITY ACT (EISA) AND THE RENEWABLE FUEL STANDARD (RFS)

The Energy Policy Act of 2005 (EPAct), which amended the Clean Air Act, created the national Renewable Fuel Standard program (RFS1). 42 U.S.C. § 7546. RFS1 required reduction and replacement of petroleum-based transportation fuel, heating oil and jet fuel with a certain volume of renewable fuel. Under the EPAct, Congress mandated the use of a minimum of 4 billion gallons of renewable fuel in the nation’s gasoline supply in 2006, and increased the threshold to 7.5 billion gallons by 2012.

The Energy Independence and Security Act of 2007 (EISA) further amended the Clean Air Act by expanding the RFS program (RFS2) in several significant ways. 42 U.S.C. § 7545(o). RFS2 increased the long-term volume goals for total renewable fuels to 36 billion gallons by 2022, subdivided the total renewable fuel requirement into four categories – total renewable fuels, advanced biofuels, biomass-based diesel, and cellulosic biofuels – each with explicit qualifying criteria and standards, and established grandfathering allowances exempting existing facilities producing renewable fuels from greenhouse gas reduction requirements. 42 U.S.C. § 7545(o)(2)(B)(i)(I),(II),(III),(IV).

Under RFS2, EPA determines whether a fuel qualifies as a renewable fuel based on statutory and regulatory criteria and determines the annual volume mandate for each category of biofuel. 42 U.S.C. § 7545(o)(2)(A)(i).³ Each fuel is subject to biomass feedstock criteria as well as a minimum lifecycle greenhouse gas emission reduction threshold as compared to the

³ EPA conducts public notice and comment with each of these agency actions.

lifecycle greenhouse gas emissions of the 2005 petroleum based fuels that it replaces. 42 U.S.C. § 7545(o)(1)(C).

The RFS further defines the four categories of renewable fuels as follows:

- Total renewable fuel – These biofuels are required to reduce lifecycle GHG emissions by at least 20% relative to conventional fuels to qualify as a renewable fuel. Most biofuels, including corn-starch ethanol from new facilities, qualify for this mandate. However, the volume of corn-starch ethanol included in the RFS was capped at 13.8 billion gallons in 2013, but grew to 15 billion gallons by 2015 and became fixed thereafter.
- Advanced biofuels – Advanced biofuels must reduce lifecycle GHG emissions by 50% to qualify. A subcomponent of the total renewable fuels mandate. Corn-starch ethanol is expressly excluded from this category. Potential feedstock sources include grains such as sorghum and wheat. Imported Brazilian sugarcane ethanol, as well as biomass-based biodiesel and biofuels from cellulosic materials (including non-starch parts of the corn plant such as the stalk and cob) also qualify. The total advanced biofuel mandate for 2013 was 2.75 billion gallons (ethanol equivalent) but increases to 21 billion gallons by 2022.
- Cellulosic and agricultural waste-based biofuel – Cellulosic biofuels must reduce lifecycle GHG emissions by at least 60% to qualify. Cellulosic biofuels are derived from cellulose, hemicellulose, or lignin. This includes cellulosic biomass ethanol as well as any biomass-to-liquid fuel such as cellulosic gasoline or diesel. The mandate requires 100 million gallons in 2010 and grows to 16 billion gallons in 2022, however, EPA has subsequently lowered the RFS mandate for this category using its waiver authority.
- Biomass-based biodiesel – Any diesel fuel made from biomass feedstocks (including algae) qualifies, including biodiesel (mono-alkyl esters) and non-ester renewable diesel (e.g., cellulosic diesel). The lifecycle GHG emissions reduction threshold is 50%. EPA established the 2013 mandate at 1.28 billion gallons (actual volume).

The mandate grew from 0.5 billion gallons in 2009 to 1 billion gallons in 2012.⁴

Importantly, there is no statutory volume requirement for "conventional" biofuel which are the biofuels that do not qualify as "advanced biofuels," i.e., corn-based ethanol, and are included as part of the "total renewable fuels" category. Conventional volumes are calculated by subtracting "advanced biofuels" from "total renewable fuels".

EPA also reviews and approves new pathways for fuels using new feedstocks and advanced technologies to meet the RFS2. 40 C.F.R. 80 § 1416. Regulated parties must demonstrate compliance with the Program on an annual basis by obtaining sufficient "renewable identification numbers" (RINs), which are the credits generated when fuel is produced that reflect the volume and renewable composition of each gallon of renewable fuel. 40 C.F.R. 80 §§ 1125, 1126.

In setting the annual volumetric standard for each biofuel category and corresponding compliance percentages for regulated parties, 42 U.S.C. § 7545(o)(3)(B)(i), EPA is guided by targets set out in the statute. However, EPA has specific authority to waive RFS volumes, in whole or in part, (1) if there is inadequate domestic supply, or (2) if "implementation of the requirement would severely harm the economy or environment of a State, a region, or the United States." 42 U.S.C. § 7545(o)(7)(A). To date, EPA has only exercised its waiver authority based on an insufficient domestic supply.⁵

⁴ Schnepf & Yacobucci, Congressional Research Service, *Renewable Fuel Standard: Overview and Issues*, available at: <https://www.ifdaonline.org/IFDA/media/IFDA/GR/CRS-RFS-Overview-Issues.pdf> (Mar. 14, 2013).

⁵ U.S. Environmental Protection Agency Office of Inspector General, "EPA Has Not Met Certain Statutory Requirements to Identify Environmental Impacts of Renewable Fuel Standard," (Aug. 18, 2016) at 2 (hereafter IG Report).

The following table shows Congressional renewable fuel volume targets set out in EISA through 2022.⁶

Volume Standards as Set Forth in EISA					
Year	Cellulosic Biofuel	Biomass-Based Diesel	Advanced Biofuel	Total Renewable Fuel	"Conventional" Biofuel
2009	NA	0.5	0.6	11.1	10.5
2010	0.1	0.65	0.95	12.95	12.0
2011	0.25	0.8	1.35	13.95	12.6
2012	0.5	1.0	2.0	15.2	13.2
2013	1.0	*	2.75	16.55	13.8
2014	1.75	*	3.75	18.15	14.4
2015	3.0	*	5.5	20.5	15.0
2016	4.25	*	7.25	22.25	15.0

⁶ U.S. Environmental Protection Agency, Renewable Fuel Standard Program, Overview for Renewable Fuel Standard, found at: <https://www.epa.gov/renewable-fuel-standard-program/overview-renewable-fuel-standard>.

Volume Standards as Set Forth in EISA					
Year	Cellulosic Biofuel	Biomass-Based Diesel	Advanced Biofuel	Total Renewable Fuel	"Conventional" Biofuel
2017	5.5	*	9.0	24.0	15.0
2018	7.0	*	11.0	26.0	15.0
2019	8.5	*	13.0	28.0	15.0
2020	10.5	*	15.0	30.0	15.0
2021	13.5	*	18.0	33.0	15.0
2022	16.0	*	21.0	36.0	15.0
*statute sets 1 billion gallons minimum, but EPA may raise requirement					

The following table shows EPA’s annual renewable fuel volume requirements promulgated for 2014 through 2017, and the 2018 standard set for biomass-based diesel.⁷ The standards demonstrate an increase of 1.2 billion gallons between 2016 and 2017 alone – a 6% increase.

Renewable Fuel Volume Requirements for 2014-2018					
	2014	2015	2016	2017	2018
Cellulosic biofuel (million gallons)	33	123	230	311	n/a
Biomass-based diesel (billion gallons)	1.63	1.73	1.9	2.0	2.1
Advanced biofuel (billion gallons)	2.67	2.88	3.61	4.28	n/a
Renewable fuel (billion gallons)	16.28	16.93	18.11	19.28	n/a

II. ETHANOL GROWTH RESULTING FROM INCREASED RENEWABLE FUEL VOLUME MANDATES HAVE RESULTED IN SIGNIFICANT LAND CONVERSION AND IMPACTS TO ECOSYSTEMS AND HABITAT

Although the push for renewable fuels in creating the RFS was well intentioned – to secure energy independence, reduced greenhouse gas emissions and other harmful pollution and to spur economic development in rural America – the policy’s drive to increase plant-based fuels has had unanticipated impacts on our land, water, and wildlife habitat. The statutory requirement to increase renewable fuels and EPA’s corresponding annual standards that have steadily increased renewable fuel volumes have led to significant ethanol growth across America’s landscape. By 2015 and continuing through 2022, the law’s renewable fuel targets suggest annual corn ethanol volumes of 15 billion gallons. Accordingly, EPA’s most recent 2017 volumetric standards set ethanol volumes at 15 billion gallons. 81 Fed. Reg. 89746 (Dec. 12, 2016). In addition, the law sets targets for increasing volumes of “advanced” biofuels derived from other feedstocks to total 21 billion gallons by 2022. 42 U.S.C. § 7545(o). Even though advanced biofuel development has not kept pace with statutory targets, prompting EPA to exercise its waiver authority and set annual advanced biofuel standards at levels below the

⁷ U.S. Environmental Protection Agency, Renewable Fuel Standard Program, Final Renewable Fuel Standards for 2017, and the Biomass-Based Diesel Volume for 2018, found at: <https://www.epa.gov/renewable-fuel-standard-program/final-renewable-fuel-standards-2017-and-biomass-based-diesel-volume>.

statutory target, ethanol growth has kept pace with targets. In fact, its growth has gone unchecked, causing significant negative impacts in return for arguably uncertain carbon reduction benefits.⁸

The policy has propelled historically high levels of corn production for ethanol. Over 97 percent of biofuels produced in the United States are derived from corn and there is little potential to spur growth of new fuels from other feedstocks.⁹ To meet federal mandates, approximately 40 percent of the U.S. corn crop is diverted to biorefineries for fuel production (up from 9 percent in 2001).¹⁰ At more than 90 million acres, corn production dominates the agricultural landscape.¹¹

Farmers have achieved increased corn productivity for ethanol through various methods. On lands already under cultivation, farmers are changing crop rotations in favor of consecutive years of corn, double-cropping, increasing chemical fertilizer and pesticide application to maximize crop density. In addition, farmers have brought large new swaths of land under cultivation for the first time causing the elimination of valuable ecosystems.¹²

A University of Wisconsin study found overall land conversion of 7.3 million acres into crop land from 2008 to 2012, the first four years of the expanded renewable fuel mandate.¹³ Much of these lands were comprised of grassland, wetlands and forest that had not been cropland for more than 20 years. The greatest total expansion was concentrated in the Dakotas, along the border of Southern Iowa and Northern Missouri, and in the Western parts of Kansas, Oklahoma, and the Texas panhandle.¹⁴ Studies in the “corn belt” states found conversion of more than 1.3 million acres of grassland into corn or soy crops between 2006 and 2011.¹⁵ Expansion also occurred in the Western Plains from South Dakota to New Mexico, which traditionally have not been locations suitable for agriculture. Northern Minnesota, Wisconsin, Southern Missouri,

⁸ David DeGennaro, National Wildlife Federation, *Fueling Destruction: The Unintended Consequences of the Renewable Fuel Standard on Land, Water, and Wildlife*, (2016), available at: http://www.nwf.org/~media/PDFs/Education-Advocacy/Fueling-Destruction_Final.ashx (hereafter DeGennaro).

⁹ *Id.* at 6.

¹⁰ *Id.* It should be noted that the use of dried distillers grain – a byproduct of ethanol production – as livestock feed reduces ethanol’s overall impact. U.S. Department of Agriculture & Economic Research Service. <http://www.ers.usda.gov/topics/crops/corn/background.aspx>.

¹¹ *Id.*

¹² *Id.* at 3.

¹³ Lark, T.J., Salmon, J.M. & Gibbs, H.K. Cropland expansion outpaces agricultural and biofuel policies in the United States, *Environmental Research Letters*, Vol. 10, 044003 (2015); DeGennaro at 7. “Taking into account other land use fluctuations during that time, the net expansion was 2.9 million acres of cropland – an area larger than the state of Massachusetts. However, this is likely an underestimate since the study evaluated only parcels of land 15 acres or greater in size, leaving out smaller areas converted along the periphery of existing fields.”

¹⁴ Tyler J Lark *et al* 2015 *Environ. Res. Lett.* Vol. 10, 044003 (2015).

¹⁵ Wright, C.K. & Wimberly, M.S. Recent land use change in the Western Corn Belt threatens grasslands and wetlands. *Proceedings of the National Academy of Sciences*, Vol. 110, 4134-4139 (2013).

Eastern Oklahoma, and parts of the Appalachians experienced conversion along forest boundaries. A recent study on land conversion in Michigan, Minnesota and Wisconsin between 2008 and 2013 documents a loss of 2 million acres, or a 37% loss of non-agricultural open space. At the same time corn acreage in those states increased by 36 percent.¹⁶

Certain parts of the country identified as “hot spots” due to intense land conversion are of particular concern because they serve as particularly unique and valuable habitat for wildlife, such as the Prairie Pothole Region wetlands of the Upper Midwest which function as the primary North American breeding ground for ducks and other waterfowl.¹⁷ In this region land conversion to corn and soy steadily increased between 2006 and 2012, with the region experiencing a 27 percent increase in corn and soy acreage between 2010 and 2012 alone. The total acreage was equivalent to an area larger than the state of Connecticut.¹⁸

The University of Wisconsin study also determined that the majority of the landscapes lost as a result of the RFS are grasslands, including native prairie, pasture, and federal Conservation Reserve Program lands, accounting for 77 percent of new farmland. One-quarter of these grasslands, which were in grass for more than 20 years are known for their high value for wildlife and carbon sequestration.¹⁹ In addition, forest lands comprised three percent of new cropland while wetlands comprised two percent of new cropland.²⁰ Of particular concern is the loss of grassland immediately surrounding wetlands, which, like wetlands, serve the critical function of providing habitat and food for nesting waterfowl and other species.²¹ Ethanol production has also wiped out other uniquely important ecosystems, including marginal lands at the edge of existing cropland supporting pollinators like bees and monarch butterflies, and buffer strips along waterways that filter polluted farm runoff before depositing into waterways that serve as drinking water sources and support aquatic species.²²

Corn production’s expansion, in large part, can be attributed to the RFS’s Congressionally-mandated use of corn ethanol in transportation fuels.²³ There is a body of evidence demonstrating that the RFS mandate, particularly corn-based ethanol and soy-based biodiesel, at increasing rates, has directly contributed to the large scale destruction of sensitive

¹⁶ Mladenoff, D.J., Sahajpal, R., Johnson, C.P. & Rothstein, D.E. Recent Land Use Change to Agriculture in the US Lake States: Impacts on Cellulosic Biomass Potential and Natural Lands. *PloS one*, Vol. 11, e0148566 (2016).

¹⁷ DeGennaro at 3.

¹⁸ Johnston, C.A. Agricultural expansion: land use shell game in the US Northern Plains. *Landscape ecology*, Vol. 29, 81-95 (2014).

¹⁹ Tyler J Lark *et al* 2015 *Environ. Res. Lett.* Vol. 10, 044003 (2015).

²⁰ *Id.*

²¹ Wright, C.K. & Wimberly, M.S. Recent land use change in the Western Corn Belt threatens grasslands and wetlands. *Proceedings of the National Academy of Sciences*, Vol. 110, 4134-4139 (2013).

²² DeGennaro at 4.

²³ *Id.*

and critical natural areas and ecosystems.²⁴ Despite clear documentation, EPA has refused to implement land conversion protections built into the law. EPA does not directly request information from ethanol producers to verify that their feedstock originated on eligible land. EPA instead has established an “aggregate compliance” approach that compares total cropland each year to the total that existed in 2007 and if a certain threshold is exceeded, the agency would investigate and determine if additional measures are necessary. However, EPA has never taken action or made efforts to reign in producers responsible for land conversion despite clear evidence of land clearing for corn production.²⁵

III. **ENDANGERED SPECIES ACT LISTED SPECIES AND DESIGNATED CRITICAL HABITAT MAY BE AFFECTED BY EPA’S POLICY OF UNABATED LAND USE CHANGE UNDER THE RENEWABLE FUEL STANDARD**

Dramatic land conversion that has occurred, largely as a result of the RFS ethanol mandate, has had adverse impacts on habitat and the species that depend on these ecosystems. The loss of natural areas to cultivation has resulted in direct mortality to species as well as loss of seasonal habitat provided by grasslands for spring nesting, brooding, fawning cover, loss of winter food and cover.²⁶ Expansion of corn and soybean production has been identified as the greatest source of wetland loss in the North and South Dakota Prairie Pothole Region, which produces more than 60 percent of the country’s total duck population.²⁷ The expansion of corn agriculture in particular also has significantly affected waterfowl, grassland birds, monarch butterflies, bees, other native pollinators, and mammals.²⁸ Adding to the loss of habitat for diverse species is the push toward intensively managed monocultures under the RFS rather than a diversity of vegetation.²⁹

In addition, widespread cultivation of corn for ethanol has significant impacts on water quality and aquatic habitat. Corn production is associated with high levels of nutrient loss and soil erosion, leading to contamination of water supplies.³⁰ Corn, as opposed to other biofuel crops, requires the highest level of fertilizer and pesticide application resulting in higher runoff

²⁴ *Id.*

²⁵ *Id.* at 12; U.S. Department of Agriculture & Farm Service Agency. *Crop Acreage Data*, <https://www.fsa.usda.gov/news-room/efoia/electronic-reading-room/frequently-requested-information/crop-acreage-data/index>. (USDA reported an increase in planted acres of commodity crops from 242.6 million in 2007 to 249 million in 2013, and the conversion of almost 400,000 acres of non-cropland to cropland over between 2011 and 2012. Studies also have confirmed that the dramatic increase in corn production and associated land conversion are the result of the RFS, with conversion rates after passage of the RFS in 2007 at nine times higher than the years prior.)

²⁶ DeGennaro at 13.

²⁷ *Id.*

²⁸ *Id.* at 14.

²⁹ *Id.* at 15.

³⁰ DeGennaro at 16.

from fields into waterways.³¹ Ethanol production, which is largely sourced by corn grown in the Mississippi River watershed and Great Lakes Basin, places the largest burden of potential water quality impacts on the Great Lakes and the Gulf of Mexico.³² Recent land conversion studies demonstrate that conversion from pasture to corn leads to increased sediments yields of up to 127 percent.³³

Excessive nutrient runoff from more intensive agriculture have led to severe algal blooms in water bodies including the Great Lakes. The majority of land in the Mississippi River watershed, which drains into the Gulf of Mexico, is farmland. Massive land based nutrient runoff into rivers and streams that flow into the Mississippi River and ultimately drain into the Gulf of Mexico is the largest contributor to the documented hypoxic area known as the “Dead Zone.”³⁴ Located at the mouth of the Mississippi in the Gulf, the Dead Zone threatens marine habitat on an enormous scale.³⁵ In fact, studies show that addressing the annual Dead Zone to improve conditions for marine life is practically impossible under the current RFS volume mandates, without huge shifts in food production.³⁶

This phenomenon is described by NOAA:

Scientists have found this year’s [2015] Gulf of Mexico dead zone — an area of low to no oxygen that can kill fish and marine life — is, at 6,474 square miles, above average in size and larger than forecast by NOAA in June. The larger than expected forecast was caused by heavy June rains throughout the Mississippi River watershed.

³¹ National Research Council & Committee on Economic and Environmental Impacts of Increasing Biofuels Production. *Renewable fuel standard: potential economic and environmental effects of US biofuel policy*. (National Academies Press, 2011); Housh, M., M. Khanna & Cai, X. Mix of First and Second Generation Biofuels to meet Multiple Environmental Objectives: Implications for Policy as a Watershed Scale. *Water Economics and Policy*, Vol. 1, 26 (2015).

³² Wallander, S., Claassen, R. & Nickerson, C. The ethanol decade: an expansion of US corn production, 2000-09. *USDA-ERS Economic Information Bulletin* (2011); U.S. Congressional Budget Office. The Renewable Fuel Standard: Issues for 2014 and Beyond. Report No. 45477, (Congressional Budget Office, Washington, DC, 2014).

³³ Shao, Y., Lunetta, R.S. Macpherson, A.J., Luo, J. & Chen, G. Assessing sediment yield for selected watersheds in the Laurentian great lakes basin under future agricultural scenarios, *Environmental management*, Vol. 51, 59-69 (2013).

³⁴ Joyce, Christopher. 2010. “Massive ‘Dead Zone’ Threatens Gulf Marine Life” (radio report). National Public Radio, Morning Edition Transcript, available at www.npr.org/templates/story/story.php?storyId=128946110.

³⁵ Donner, S.D. & Kucharik, C.J. Corn-based ethanol production compromises goal of reducing nitrogen export by the Mississippi River. *Proceedings of the National Academy of Sciences*, Vol. 2015, 4513-4518 (2008).

³⁶ Donner, S. D. & Kucharik, C. J., *Corn-based ethanol production compromises goal of reducing nitrogen export by the Mississippi River*, *Proceedings of the National Academy of Sciences*, Vol. 105, 4513- 4518 (2008)

The measured size this year — an area about the size of Connecticut and Rhode Island combined — is larger than the 5,052 square miles measured last year, indicating that nutrients from the Mississippi River watershed are continuing to affect the nation's coastal resources and habitats in the Gulf. The size is larger than the Gulf of Mexico/Mississippi River Watershed Nutrient Task Force (Hypoxia Task Force) target of 1,900 square miles.

...

The hypoxic zone off the coast of Louisiana and Texas forms each summer threatening the ecosystem that supports valuable commercial and recreational Gulf fisheries. NOAA-funded research in the past decade shows hypoxia results in habitat loss, displacement of fish (including shrimp and croaker) from their preferred areas, and a decline in reproductive ability in some species.³⁷

An article, entitled “Corn boom could expand ‘dead zone’ in Gulf,” summarizes the contribution of corn ethanol production to the Dead Zone:

JEFFERSON, Iowa — Because of rising demand for ethanol, American farmers are growing more corn than at any time since World War II. And sea life in the Gulf of Mexico is paying the price.

The nation's corn crop is fertilized with millions of pounds of nitrogen-based fertilizer. And when that nitrogen runs off fields in Corn Belt states, it makes its way to the Mississippi River and eventually pours into the Gulf, where it contributes to a growing "dead zone" — a 7,900-square-mile patch so depleted of oxygen that fish, crabs and shrimp suffocate.

The dead zone was discovered in 1985 and has grown fairly steadily since then, forcing fishermen to venture farther and farther out to sea to find their catch. For decades, fertilizer has been considered the prime cause of the lifeless spot.

With demand for corn booming, some researchers fear the dead zone will expand rapidly, with devastating consequences.

"We might be coming close to a tipping point," said Matt Rota, director of the water resources program for the New Orleans-based Gulf Restoration Network, an environmental group. "The ecosystem might change or collapse as opposed to being just impacted."

Environmentalists had hoped to cut nitrogen runoff by encouraging farmers to apply less fertilizer and establish buffers along waterways. But the demand for the

³⁷ NOAA, “2015 Gulf of Mexico dead zone ‘above average’,” (Aug. 4, 2015), available at <http://www.noaaneews.noaa.gov/stories2015/080415-gulf-of-mexico-dead-zone-above-average.html>

corn-based fuel additive ethanol has driven up the price for the crop, which is selling for about \$4 per bushel, up from a little more than \$2 in 2002.

That enticed American farmers — mostly in Iowa, Illinois, Minnesota, North Dakota and South Dakota — to plant more than 93 million acres of corn in 2007, the most since 1944. They substituted corn for other crops, or made use of land not previously in cultivation.

Corn is more "leaky" than crops such as soybean and alfalfa — that is, it absorbs less nitrogen per acre. The prime reasons are the drainage systems used in corn fields and the timing of when the fertilizer is applied.

The Environmental Protection Agency estimates that up to 210 million pounds of nitrogen fertilizer enter the Gulf of Mexico each year. Scientists had no immediate estimate for 2007, but said they expect the amount of fertilizer going into streams to increase with more acres of corn planted.

"Corn agriculture practices release a lot of nitrogen," said Donald Scavia, a University of Michigan professor who has studied corn fertilizer's effect on the dead zone. "More corn equals more nitrogen pollution."

Farmers realize the connection between their crop and problems downstream, but with the price of corn soaring, it doesn't make sense to grow anything else. And growing corn isn't profitable without nitrogen-based fertilizer.

"I think you have to try to be a good steward of the land," said Jerry Peckumn, who farms corn and soybeans on about 2,000 acres he owns or leases near the Iowa community of Jefferson. "But on the other hand, you can't ignore the price of corn."

Peckumn grows alfalfa and natural grass on the 220 or so acres he owns, but said he cannot afford to experiment on the land he rents.

The dead zone typically begins in the spring and persists into the summer. Its size and location vary each year because of currents, weather and other factors, but it is generally near the mouth of the Mississippi.³⁸

The Dead Zone impacts endangered and threatened species such as the Gulf sturgeon, Loggerhead turtle and Sperm whale. The huge influx of nutrients such as nitrogen and phosphorous cause massive phytoplankton blooms leading to a large increase in zooplankton that feed on phytoplankton. Large amounts of dead phytoplankton and zooplankton waste then accumulates on the seafloor, burying bottom dwellers and prey for larger fish and mammals that

³⁸ Environment on NBC News.com, "Corn boom could expand 'dead zone' in Gulf," (Dec. 17, 2007), available at: http://www.nbcnews.com/id/22301669/ns/us_news-environment/t/corn-boom-could-expand-dead-zone-gulf/#.WUrSE7i2aSo.

frequent these waters for food, nesting and raising young. The decomposition of plankton matter depletes the oxygen in the area faster than it can be replaced, causing the large hypoxic Dead Zone.³⁹ Although the federal government promised to find ways to reduce the flow of nutrients almost 20 years ago, average nutrient loads continue to rise to record levels and the “Dead Zone” becomes more expansive every year, nearly doubling its size since the 1980s.⁴⁰ The Dead Zone’s inhospitable conditions are threatening federally listed species and may be impairing essential behavioral patterns such as breeding, feeding or sheltering.

Overall, the impacts described above are taking a toll on sensitive and vulnerable species, many of which are federally listed as threatened or endangered under the Endangered Species Act. Specifically, there are numerous listed species with designated critical habitat in regions in which land conversion is taking place due to corn production growth for ethanol. Species that have experienced direct and/or indirect impacts from land conversion occurring in critical habitat areas or in areas near designated critical habitat may include, but are not limited to:

Pipingplover (*Charadrius melodus*):

The piping plover is a small shorebird that nests in the three separate geographic populations in the U.S.: the Great Plains states, the shores of the Great Lakes, and the shores of the Atlantic coast. Birds from all populations winter on the southern Atlantic and Gulf coasts in the U.S. The Piping plover is listed as endangered in the Great Lakes region and threatened elsewhere.⁴¹ Critical habitat for the bird located in North Dakota may be directly or indirectly impacted by land conversion.

WhoopingCrane (*Grus Americana*):

The Whooping Crane, named for its whooping sound, is the tallest North American species of bird. It has a lifespan of 22 to 24 years in the wild. It is endangered. By 1941, the bird was pushed to the brink of extinction to just 21 wild birds due to unregulated hunting and loss of habitat. In 2003, there were about 153 pairs of whooping cranes. Conservation efforts have led to limited recovery.⁴² Recent land conversion has likely occurred within the Whooping Crane’s critical habitat.

³⁹ National Oceanic and Atmospheric Administration (NOAA). 2009a. “Dead Zones. Hypoxia in the Gulf of Mexico,” (factsheet) at 1-2, available at http://www.noaanews.noaa.gov/stories2009/pdfs/new%20fact%20sheet%20dead%20zones_final.pdf.

⁴⁰ Joyce, Christopher. 2010. “Massive 'Dead Zone' Threatens Gulf Marine Life” (radio report). National Public Radio, Morning Edition Transcript, available at www.npr.org/templates/story/story.php?storyId=128946110.

⁴¹ U.S. Fish and Wildlife Service, *Piping Plover*, August 2016, <https://www.fws.gov/Midwest/endangered/pipingplover/index.html>.

⁴² U.S. Fish and Wildlife Service, North Florida Ecological Services Office, *Species Status and Fact Sheet: Whooping Crane*, June 2016, <https://www.fws.gov/northflorida/whoopingcrane/whoopingcrane-fact-2001.htm>.

Topekashiner (*Notropis topeka*):

The Topeka shiner is a small minnow that can be found in prairie streams in parts of Iowa, Kansas, Minnesota, Missouri, and Nebraska. The fish is listed as endangered. Its survival is threatened by habitat destruction, sedimentation, and changes in water quality likely associated with increased agricultural activity.⁴³ It is likely that land conversion for ethanol production has occurred within or near critical habitat zones in southwest Minnesota and northwest Iowa.

DakotaSkipper (*Hesperia dacotae*):

The Dakota skipper is a small butterfly that lives in high-quality mixed and tallgrass prairie. It has been extirpated from Illinois and Iowa and now occurs in remnants of native mixed and tallgrass prairie in Minnesota, the Dakotas and southern Canada. The Dakota skipper is listed as threatened.⁴⁴ Land conversion likely has occurred directly adjacent to critical habitat.

Purplebankclimber (*Elliptoideus sloatianus*):

The Purple bankclimber is a large fresh water mussel that can reach 4-5.5 inches. It has a rhomboidal shell that transitions from grey to black on the exterior and white to purple on its inner shell. The mussel is a filter feeder that feeds on plankton and detritus. It inhabits rivers with moderate currents and sandy floors. The species is found in Georgia and Florida rivers. Sedimentation and pesticide application pose a significant threat to the species. The Purple bankclimber is listed as threatened and is a target species in a 7-species Federal Recovery Plan.⁴⁵ Significant land conversion has likely occurred in areas surrounding the species designated critical habitat in southwest Georgia, leading to potential water quality impacts that could jeopardize the species.

Fatthreeridge (*Amblema neislerii*):

The Fat threeridge is a fresh water mussel found in small to large rivers of moderate current and sandy or silty bottoms. It is native to rivers of southern Georgia and Florida. They eat earthworms and other invertebrates. Sedimentation due to inadequate riparian buffer zones is a significant threat to the species. The species is listed as endangered.⁴⁶ Significant land conversion has likely occurred in areas surrounding the species designated critical habitat, leading to potential alteration of the species' aquatic environment.

⁴³ U.S. Fish and Wildlife Service, *Questions and Answers About the Topeka Shiner*, September 2016, <https://www.fws.gov/midwest/endangered/fishes/pdf/tosh-qas.pdf>

⁴⁴ U.S. Fish and Wildlife Service, *Dakota Skipper*, October 2014, <https://www.fws.gov/midwest/Endangered/insects/dask/pdf/DakotaSkipperFactSheet22Oct2014.pdf>

⁴⁵ Florida Fish & Wildlife Conservation Commission, Purple bankclimber, <http://myfwc.com/wildlifehabitats/imperiled/profiles/invertebrates/purple-bankclimber/>

⁴⁶ Georgia Department of Natural Resources, Wildlife Resources Division, Fat threeridge, http://www.georgiawildlife.org/sites/default/files/uploads/wildlife/nongame/pdf/accounts/invertebrates/amblema_neislerii.pdf.

Ovalpigtoe (*Pleurobema pyrifforme*):

The Oval pigtoe is a small freshwater mussel that can reach a length of 2.4 inches. It has a flattened oval-shaped shell that is yellow to brown on the exterior and white or salmon colored on the interior shell. It is a filter feeder that feeds on plankton and detritus. The mussel inhabits medium-sized rivers and small creeks with slow to moderate currents and a sandy silt to gravel floor. It is found in Georgia and Florida rivers and streams. The Oval pigtoe is listed as endangered. Sedimentation, pesticide and other chemical pollution pose a direct threat to the species. It is a target species in a 7-species Federal Recovery Plan.⁴⁷ It is likely that significant land conversion has occurred in areas surrounding the species' designated critical habitat located in rivers of southwest Georgia.

Gulfsturgeon (*Acipenser oxyrinchus desotoi*):

The Gulf sturgeon is an anadromous fish that migrates into coastal rivers from Louisiana to Florida in the spring and summer to spawn, and inhabits the Gulf of Mexico and its estuaries and bay in the winter months. Sturgeon are characterized by bony plates, a hard extended snout, and an asymmetrical tail. The fish can grow between four and eight feet in length and weigh up to 200 pounds. Its average lifespan is 20 to 25 years but it can live up to 60 years.

The Gulf sturgeon is a bottom feeder and its diet is comprised of macroinvertebrates including worms, mollusks, crustaceans and brachiopods. The sturgeon forages in the Gulf of Mexico's brackish and marine waters during the winter months only. Sturgeon do not forage in the riverine environment during spawning season. Sturgeon require a clean, rocky substrate for spawning.⁴⁸

The Gulf sturgeon is a federally listed threatened species throughout its range. Its designated critical habitat encompasses spawning rivers and adjacent estuarine areas including parts of the Gulf of Mexico around the mouth of the Mississippi River. These areas are directly impacted by eutrophication from agricultural runoff, resulting in low dissolved oxygen levels and hypoxia that contribute to the region's "Dead zone." Gulf sturgeon and the benthic organisms it feeds on are vulnerable to these conditions.

Loggerheadturtle (*Caretta caretta*):

Named for their larger heads, the loggerhead turtle has powerful jaws enabling them to feed on hard shelled animals. They have reddish-brown top shells and pale yellow bottom shells. The loggerhead inhabits three different ecosystems during their lives – beaches, open ocean waters, and nearshore coastal areas. The loggerhead nests on ocean beaches. Soon after birth, hatchlings move to the surf and eventually swim or get swept out to open ocean waters. During adolescence, ages 7 to 12 years, the juvenile loggerhead makes its way back to coastal waters where it matures into adulthood. These coastal areas provide important habitat for juveniles, as well as crucial adult habitat for foraging, inter-nesting and migration.

⁴⁷ Florida Fish and Wildlife Conservation Commission, Oval pigtoe, <http://myfwc.com/media/2211676/Oval-pigtoe.pdf>.

⁴⁸ NOAA Fisheries, Gulf Sturgeon, <http://www.fisheries.noaa.gov/pr/species/fish/gulf-sturgeon.html>

Federally listed as a threatened species, the loggerhead turtle's critical habitat encompasses waters and beaches of the Gulf of Mexico directly impacted by dead zone hypoxic conditions.

Spermwhale (*Physeter microcephalus*):

Sperm whales are the largest of the toothed whales and are distinguished by their extremely large heads comprising 25 to 35 percent of its total body length. Adult females will grow up to lengths of 36 feet and weigh 15 tons while adult males will reach 52 feet and weigh up to 45 tons. It is the only cetacean that has an asymmetrically left situated single blowhole. Sperm whales have the largest brain of any animal. The sperm whales diet is comprised mostly of large organisms, including large squid, sharks, skates and other fish. At the age of 9 years, females reach sexual maturity at which point they produce a calf approximately every 5 years. Sperm whales generally inhabit waters of almost 2000 feet depth or more. Sperm whale migration is unpredictable. While in some mid-latitudes there appears to be a trend to migrate north and south depending on the seasons, in tropical and temperate areas, like the Gulf of Mexico, there appears to be no seasonal migration.⁴⁹

Sperm whales are federally listed as endangered, initially depleted by more than two centuries of unregulated whaling. However, currently they are impacted by a range of threats including poor water quality from nutrient runoff and other pollution.

Currently there is a pending petition before NOAA to separately list the Gulf of Mexico sperm whale as a distinct population segment because it is a discrete population that faces additional unique threats to its survival. There appears to be a resident population of sperm whales in the Gulf of Mexico because of its year-round presence in the region. Coastal pollution in the region, in particular the uninhabitable hypoxic "Dead Zone" caused by agricultural run-off from the Mississippi River poses a threat to this distinct sperm whale habitat.⁵⁰

IV. EPA'S ACTIONS TAKEN UNDER THE RENEWABLE FUEL STANDARD VIOLATE THE ENDANGERED SPECIES ACT

EPA must consult with the FWS and NMFS on any of its agency actions "in which there is discretionary Federal involvement or control." 50 C.F.R. § 402.03. EPA has discretion in setting annual volumetric standards for renewable fuels, in exercising its authority to waive renewable fuel volumes, and in approving new pathways for renewable fuels using new feedstocks and advanced technologies. In fact, EPA's waiver authority permits EPA to waive RFS volumes "when implementation of the requirements would severely harm the environment."

⁴⁹ NOAA Fisheries, Sperm Whale, <http://www.fisheries.noaa.gov/pr/species/mammals/whales/sperm-whale.html>.

⁵⁰ "Petition to list the Gulf of Mexico Distinct Population Segment of Sperm Whale (*Physeter macrocephalus*) Under the U.S. Endangered Species Act," Petition Submitted to the U.S. Secretary of Commerce, Acting through the National Oceanic and Atmospheric Administration and the National Marine Fisheries Service by Wild Earth Guardians, (Dec. 2011), http://www.fisheries.noaa.gov/pr/species/petitions/spermwhale_gom_dps.pdf.

On August 18, 2016, Sierra Club submitted requests under the Freedom of Information Act to the EPA, FWS, and NMFS for all relevant documentation on whether EPA had initiated and conducted consultation with FWS and NMFS in its discretionary activity under the Renewable Fuel Standard. On September 26, September 28, and October 7, 2016 we received responses to our requests from NMFS, EPA, and FWS, respectively. On December 19, 2016, we submitted an appeal of the initial response returned by FWS, as several hundred pages of the produced documents had been redacted without citing an exception as described in the FOIA. In the letter accompanying the initial release of the documents containing the redacted pages, FWS stated only “Because portions of these documents originate with or substantially concern U.S. Environmental Protection Agency (EPA), the unredacted versions of these documents will be provided to EPA so that they can make a release determination on their portions.” On December 30, 2016, EPA released the unredacted versions of the documents via FOIA online. The FOIA responses reveal that contrary to ESA §7, there has been no consultation by any of these agencies concerning the RFS program or associated land conversions, formal or informal. There have been no biological assessments by EPA, concurrence letters by FWS or NFMS, no biological opinions or jeopardy findings, no reasonable and prudent alternatives and no incidental take statements, all as required by ESA §7. In short, the agencies have not complied with §7 at all.

A. EPA VIOLATED SECTION 7(A)(2) BY FAILING TO INITIATE CONSULTATION BEFORE TAKING ACTION UNDER THE RENEWABLE FUEL STANDARD

The foregoing responses indicate that EPA did not conduct the required Section 7 consultation or initiate such consultation by requesting from the wildlife agencies a list of any ESA-listed or proposed species that may be present in the area of the agency action. 16 U.S.C. § 1536(c)(1); 50 C.F.R. § 402.12. Given this information and the foregoing documentation of the expansive land conversion taking place under the RFS impacting ecosystems including critical habitat for federally listed species, EPA has failed to meet its obligations of ensuring against jeopardy to listed species or destruction or adverse modification of critical habitat. As such, EPA has violated its procedural and substantive obligations under ESA Section 7(a)(2), 16 U.S.C. § 1536(a)(2).

“The ESA mandates that defendants place conservation above any of the agency’s competing interests.” *Kentucky Heartwood v. Worthington*, 20 F. Supp. 2d 1076, 1083 (E.D. Ky. 1998). These procedural and substantive violations cannot be separated. Congress established the Section 7(a)(2) consultation procedure explicitly “to ensure compliance with the [ESA’s] substantive provisions.” *Thomas v. Peterson*, 753 F.2d 754, 764 (9th Cir. 1985). “If a project is allowed to proceed without substantial compliance with those procedural requirements, there can be no assurance that a violation of the ESA’s substantive provisions will not result.” *Id.* (citing *Tenn. Valley Auth. v. Hill*, 437 U.S. 153 (1978)); *see also Conner v. Burford*, 848 F.2d 1441, 1458 (9th Cir. 1988) (the ESA’s “strict substantive provisions . . . justify more stringent enforcement of its procedural requirements, because the procedural requirements are designed to ensure compliance with the substantive provisions.”); *Washington Toxics Coal. v. Env’tl. Prot. Agency*, 413 F.3d 1024, 1034-35 (9th Cir. 2005).

EPA’s violations of ESA Section 7(a)(2) in connection with setting annual renewable fuel volumes, determining whether to exercise its authority to waive renewable fuel volumes, and/or reviewing and approving fuel pathways using new feedstocks and advanced technologies are

actionable under the ESA's citizen suit provision, 16 U.S.C. § 1540(g)(1)(A). Should EPA fail to remedy these violations within the 60-day notice period, the undersigned may commence suit to obtain all available judicial remedies.

Moreover, by taking these actions without first completing consultation with wildlife agencies in accordance with ESA Section 7(a)(2), EPA has violated the ESA's prohibitions against any irreversible and irretrievable commitment of resources that would foreclose the formulation and implementation of reasonable and prudent alternatives to jeopardy. *See* 16 U.S.C. § 1536(d).

Congress specifically enacted Section 7(d) "to prevent Federal agencies from 'steamrolling' activity in order to secure completion of the projects regardless of their impact on endangered species." *Pac. Rivers Council v. Thomas*, 936 F. Supp. 738, 745 (D. Idaho 1996) (quoting *N. Slope Borough v. Andrus*, 486 F. Supp. 332, 356 (D.D.C. 1980), *aff'd in part and rev'd in part on other grounds*, 642 F.2d 589 (D.C. Cir. 1980)). Section 7(d) "clarifies the requirements" of Section 7(a)(2) to "ensur[e] that the status quo will be maintained during the consultation process." *Conner v. Burford*, 836 F.2d 1521, 1536 & n.34 (9th Cir. 1988).

In light of the myriad of harmful effects that land use conversion resulting from renewable fuel mandates is having on listed species and designated critical habitats, EPA's annual promulgation of renewable fuel standards that consistently ramp up biofuel fuel production, in particular ethanol, without obtaining input from FWS and NMFS, constitutes an irreversible and irretrievable commitment of resources that would foreclose the formulation and implementation of reasonable and prudent alternatives to jeopardy. Moreover, EPA's failure to explicitly monitor feedstock origin after each rulemaking allows regulated entities to freely increase biofuel production in a manner that threatens federally listed species.

EPA's violations of ESA Section 7(d) in connection with its annual renewable fuel volume promulgation and its failure to consider exercising its waiver authority to reduce volumes based on potential severe harm to the environment, are actionable under the ESA's citizen suit provision, 16 U.S.C. § 1540(g)(1)(A). Should EPA fail to remedy these violations within the 60-day notice period, The undersigned may commence suit to obtain all available judicial remedies.

B. EPA'S ACTIONS UNDER THE RENEWABLE FUEL STANDARD ARE CAUSING TAKE OF ESA PROTECTED SPECIES

EPA is in violation of the prohibition on the "take" of listed species in Section 9 of the ESA. 16 U.S.C. § 1538(a)(1)(C) (prohibiting take by any person); *id.* § 1532(13) ("person" includes "any officer, employee, agent, department or instrumentality of the Federal Government"). Federal agencies are liable for take resulting from activities they approve. *Strahan v. Cox*, 127 F.3d 155, 163 (1st Cir. 1997); *Loggerhead Turtle v. Cty. Council of Volusia Cty.*, 148 F.3d 1231, 1251 (11th Cir. 1998); *Defenders of Wildlife v. Adm'r, Env'tl. Prot. Agency*, 882 F.2d 1294 (8th Cir. 1989). By approving annual renewable fuel volumes and new fuel pathways without initiating and/or completing consultation with FWS and NMFS, EPA is operating without take liability coverage.

EPA's annual renewable fuel volumes and the attendant increase in feedstock production and land conversion will cause take, including death and injury to ESA-listed species, either from direct impacts or from habitat modification. The approval of new fuel pathways using new feedstocks that take a toll on ecosystems and habitat without consultation could have similar impacts on ESA-listed species. These adverse effects will harass, harm, injure, and even lead to the death of ESA-protected species including, but not limited to, the Piping plover, Whooping crane, Topeka shiner, Dakota skipper, Purple bankclimber, Fat threeridge, Oval pigtoe, Gulf sturgeon, Loggerhead turtle, and Sperm whale.

In order to achieve safe harbor from ESA take liability for its renewable fuel standards and approvals, EPA must have written authorization from the FWS and/or NMFS in the form of an incidental take statement ("ITS") issued as part of the FWS's biological opinion at the conclusion of formal consultation under Section 7. Because EPA has failed to carry out its obligations to comply with Section 7 and obtain an ITS from the wildlife agencies as part of a biological opinion, EPA is liable for violations of Section 9 of the ESA.

EPA's violations of ESA Section 9 in connection with setting renewable fuel standards and approving new renewable fuel pathways are actionable under the ESA's citizen suit provision, 16 U.S.C. § 1540(g)(1)(A). Should EPA fail to remedy these violations within the 60-day notice period, Sierra Club may commence suit to obtain all available judicial remedies.

V. PERSONS PROVIDING NOTICE

As required by 40 C.F.R. § 54.3, the persons providing this notice are:

Devorah Ancel
Staff Attorney
Sierra Club Environmental Law Program

(b) (6)

Cyn Sarthou
Executive Director
Gulf Restoration Network

(b) (6)

While EPA regulations require the above notice information, please direct all correspondences and communications regarding this matter to the undersigned counsel.

CONCLUSION

If you believe any of the facts described above are in error or have any information indicating that you have not violated the ESA we urge you to contact the undersigned counsel immediately. If the EPA, FWS and NMFS do not act to remedy these violations within 60 days, Gulf Restoration Network and Sierra Club intend to initiate litigation in federal district court against the agencies and the appropriate agency officials concerning these violations to seek declaratory and injunctive relief and reasonable attorneys' fees and costs. Sierra Club and Gulf Restoration Network are interested in obtaining early and prompt resolution of these allegations. If you have any questions or would like to discuss potential remedies prior to the expiration of this notice, please do not hesitate to contact us at the telephone numbers or email addresses below.

Sincerely,



Devorah Ancel
Eric Huber
Attorneys for the
Sierra Club and Gulf Restoration Network

Sierra Club Environmental Law Program

(b) (6)



Cc: Jeff Sessions, Department of Justice Attorney General of the United States
Channing D. Phillips, United States Attorney for the District of Columbia
Kevin Minoli, USEPA Acting General Counsel
Daniel Jorjani, Department of the Interior Acting Solicitor
Kristen L. Gustafson, NOAA Acting General Counsel
Jeffrey S. Dillen, NOAA Acting General Counsel

From: Burch, Julia
Subject: EPA-NMFS-FWS: Reconnecting on TA for RFS
To: Burkholder, Dallas; Machiele, Paul; Michaels, Lauren; Korotney, David; Li, Ryland (Shengzhi); Hambright, Rosemary; cathy.tortorici@noaa.gov; Nancy Brown-Kobil - NOAA Federal; Aubrey, Craig; Keith Paul; Karen Myers
Sent: February 10, 2021 2:46 PM (UTC-05:00)
Attached: Feb 2021 RFS overview.pptx

Hello!

As you may know, on Jan 6 EPA and NMFS had a discussion about picking up our TA conversations from a few years ago. At that meeting we decided to start off with a RFS 101 to refresh everyone on the basics of the RFS program and some recent thinking EPA has been doing internally about ESA obligations. Since EPA expects to work with both FWS and NMFS on these issues, it seemed sensible to invite everyone to this next conversation.

Materials attached.

If you have any questions or concerns, please reach out to me.

Thanks!

Regards,

Julia Burch
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
202-564-0961 (desk)
202-853-4701 (cell)
(Pronouns: she/her)

Microsoft Teams meeting
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(b) (6)



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The Renewable Fuel Standard Program

February 2021

Overview



Fuels Provisions in the Clean Air Act



RFS Basics



Annual RFS RVO Rules
(renewable volume obligation)



Small Refinery Exemptions



Current activities

The Clean Air Act and Fuels

- Within OAR, the Office of Transportation and Air Quality (OTAQ) has responsibility for implementing vehicle and fuel programs under the Clean Air Act
- Sections 202 – 210, 213-217, 219 of the Act relate to vehicles and engines
- Section 211 of the Act provides EPA with the authority to regulate fuels
 - Many parts, including 211(o), which establishes the RFS program, are Congressional mandates
- Examples of fuel regulations from past 40+ years
 - Prohibition on lead in motor gasoline
 - Limitations on sulfur levels in gasoline and diesel
 - Limitations on toxics (e.g., benzene) in gasoline
 - The Renewable Fuel Standard (RFS) program
- The fuels sector: large, decentralized, many stakeholders, very dynamic

Implementing the RFS Program

- Statute directs EPA to implement the RFS program
 - Provides key consultation roles for USDA, DOE
- EPA finalized “RFS 1” program regulations in 2007 (implementing EPCA 2005), and “RFS2” regulations in 2010 (implementing EISA 2007)
- RFS provisions of the Clean Air Act require that transportation fuel contains specified volumes of renewable fuels
- Current status: EPA is actively implementing the program
 - Annual rulemakings to put in place each set of standards as required by law
 - Regulatory program adjustments to respond to an evolving market
 - Significant compliance and enforcement activities
 - Ongoing approval processes for new renewable fuels entering the marketplace, including GHG lifecycle assessments
 - Rules and actions are regularly litigated
- High visibility program, requires very hands-on management

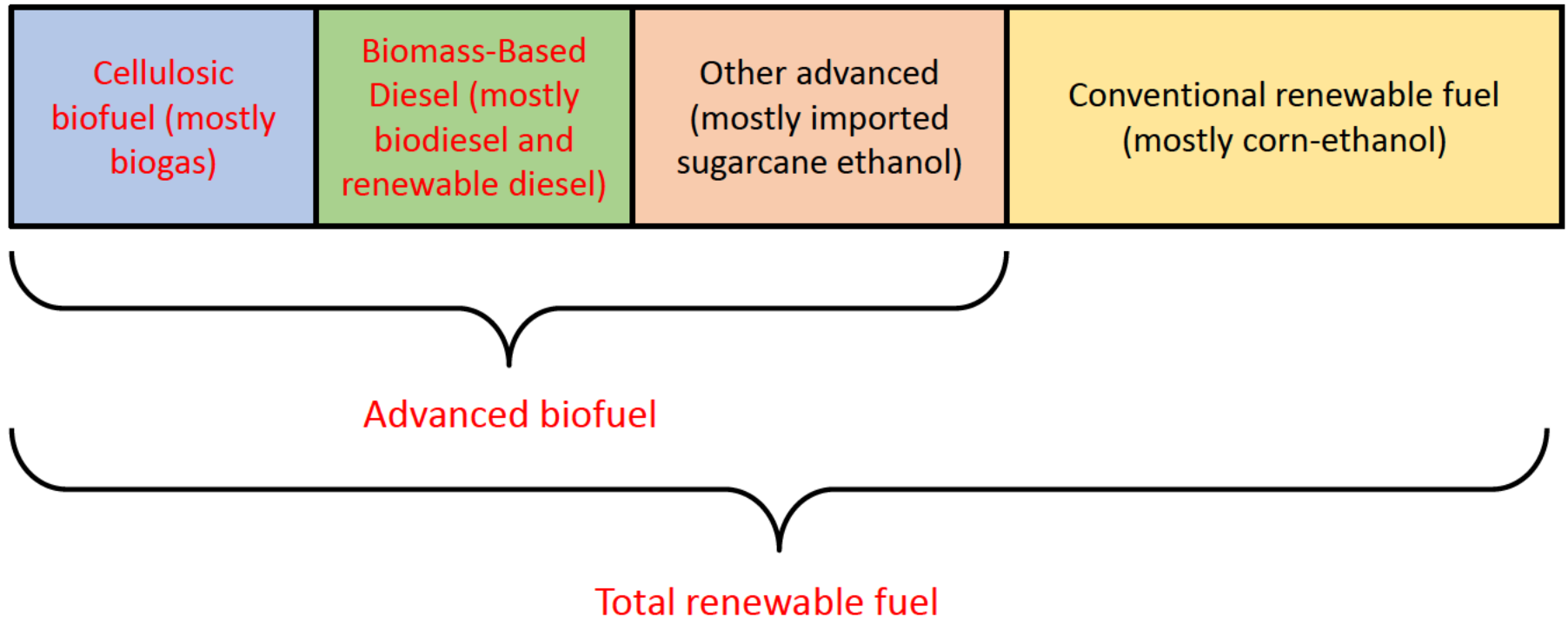
People

- EPA staff: cross-divisional team within the Office of Transportation and Air Quality and outside of OAR
 - Regulatory analysis supporting development of the annual standards
 - Economic and lifecycle analysis
 - Environmental impact analysis
 - RFS program compliance
 - Office of General Counsel
 - Enforcement and Compliance Office
- Significant engagement with external stakeholders, both within federal government (USDA, DOE, DOJ) and with states, industry, etc.
- Well-organized stakeholder groups with widely varying perspectives
 - Biofuel producers and agricultural producers; gasoline and diesel refiners and importers; fuel retailers and marketers; consumer/environmental/anti-hunger groups; states; Hill

Four Renewable Fuel Categories (statutory)

Renewable Fuel Category	Example of Qualifying Renewable Fuel	Minimum GHG Lifecycle Emissions Reduction (relative to 2005 baseline)
Cellulosic	Biogas from landfills, etc. Ethanol, gasoline or diesel from corn stover, switch grass, tree residues, etc.	60%
Biomass-based diesel	Biodiesel and renewable diesel from soy, canola, waste oils	50%
Advanced biofuel	Ethanol from sugarcane, most biodiesel/renewable diesel	50%
Renewable fuel	Ethanol from corn starch, biodiesel from palm oil	20% (unless grandfathered)

Interaction Between the Four Standards



- Items in **red** are the fuel categories for which standards are set
- Note that there is no standard for conventional renewable fuel

Statutory Volumes

In billion gallons

	Cellulosic biofuel	Biomass-based diesel	Advanced biofuel	Total renewable fuel	"Conventional" (total renewable minus advanced)
2009	na	0.5	0.6	11.1	10.5
2010	0.1	0.65	0.95	12.95	12
2011	0.25	0.8	1.35	13.95	12.6
2012	0.5	1	2	15.2	13.2
2013	1	a	2.75	16.55	13.8
2014	1.75	a	3.75	18.15	14.4
2015	3	a	5.5	20.5	15
2016	4.25	a	7.25	22.25	15
2017	5.5	a	9	24	15
2018	7	a	11	26	15
2019	8.5	a	13	28	15
2020	10.5	a	15	30	15
2021	13.5	a	18	33	15
2022	16	a	21	36	15

a: statute sets 1b gal minimum, but EPA may raise requirement

Fuel Pathways

- For a fuel to generate RINs and be used in the program, EPA must first determine that it qualifies under the statute and regulations
 - Feedstock must, for example, meet definition of “renewable biomass”
 - Fuel must also meet statutory thresholds for lifecycle GHG emission reductions relative to petroleum baseline
- EPA conducts lifecycle GHG analyses for fuel pathways, including looking at significant indirect impacts. A fuel pathway is a specific combination of three components: (1) feedstock, (2) production process and (3) fuel type. Example of a fuel pathway: ethanol produced from corn starch oil using a dry mill process
- EPA has already approved multiple fuel pathways under the program, under all four categories. See <https://www.epa.gov/renewable-fuel-standard-program/approved-pathways-renewable-fuel>
- Advanced pathways already approved include ethanol made from sugarcane; cellulosic diesel; cellulosic ethanol made from corn stover; and others.
- Many companies continue to petition EPA to approve new pathways, many made with advanced technologies or with new feedstocks. See <https://www.epa.gov/renewable-fuel-standard-program/pending-petitions-renewable-fuel-pathways>

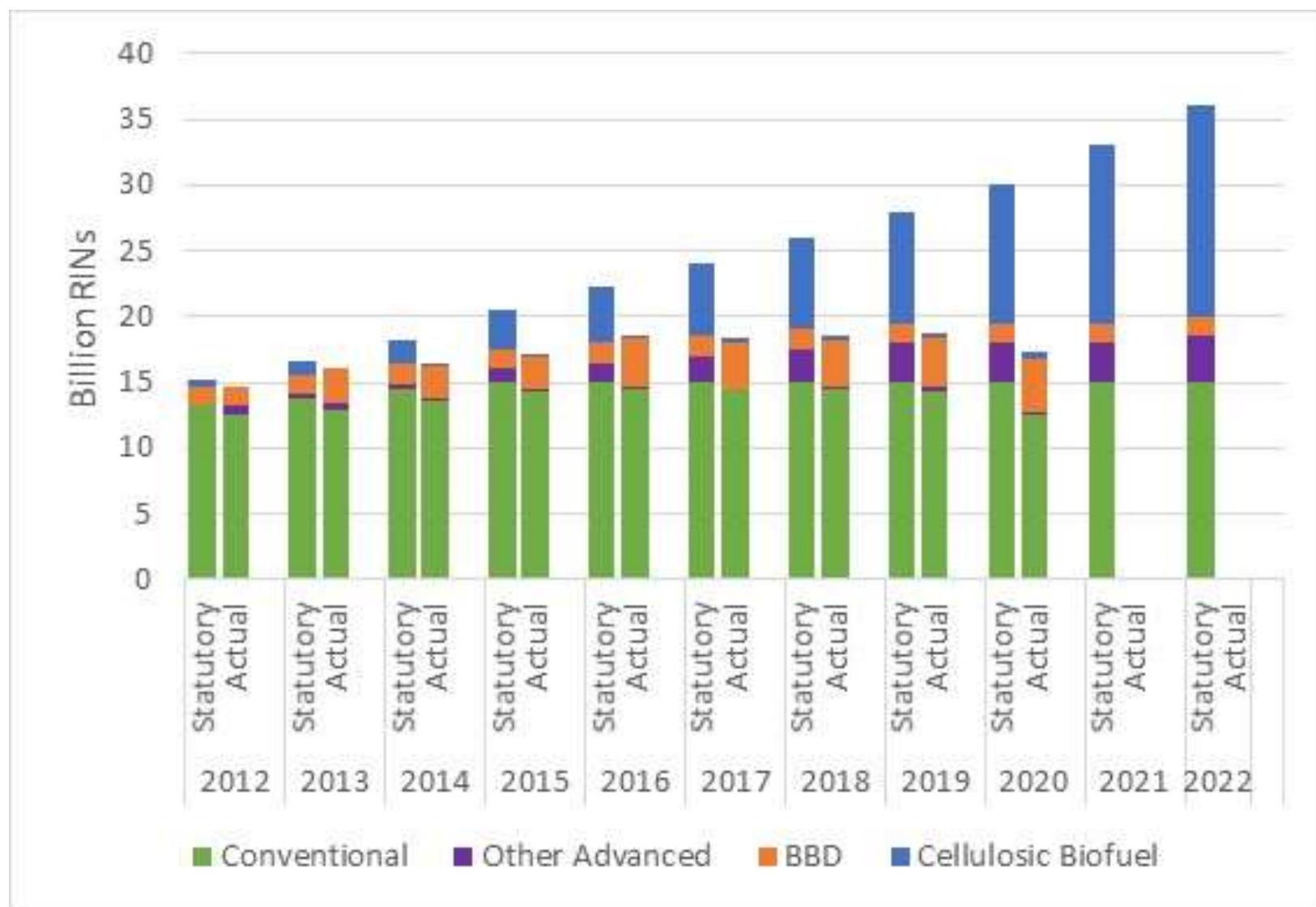
Compliance Basics

- Obligated Parties are refiners or importers of gasoline or diesel
- The volumes are converted into 4 different percentages for each standard -- obligated parties must demonstrate compliance with that percentage standard each year
- Obligated Parties must obtain sufficient RINs (Renewable Identification Numbers) for each category in order to demonstrate compliance
 - RIN = compliance “credit” for the program; Different RINs (D-Codes) for each type of fuel
 - RINs are generated when a producer makes a gallon of renewable fuel
 - RINs are commodities that are tradable
 - Obligated parties can buy biofuel with RINs attached, or buy separated RINs on the market
 - After each calendar year, obligated parties retire RINs to EPA to demonstrate compliance
 - The RIN enables obligated parties to comply without physically producing, blending, or selling the renewable fuel themselves, allowing the marketplace to be more efficient
 - (b) (5)
- Program also has other provisions allowing for flexibility in compliance (RIN carryover; deficit carry forward)
- EPA publishes data on RIN generation and compliance online
 - All RIN transactions must be logged with EPA through an electronic system (EMTS)
 - Ongoing efforts to enhance data transparency of program

Annual Volume Rules

- The CAA requires EPA to set the RFS volume requirements annually, in the form of a percentage standard
 - The volume requirements are to be based on the statutory targets, but EISA in some cases requires, and in other cases authorizes, EPA to adjust the volume requirements using waiver authorities in statute
 - EPA bases the % standards on EIA projections of gasoline / diesel consumption for the next year
 - In 2020 EPA began projecting SRE exemptions when calculating the % standards
- Standards are set through a notice-and-comment process
 - Provides opportunity for public comment and stakeholder engagement (hearings)
 - EISA requires the standards be finalized by November 30th of the year preceding the compliance year
- The Clean Air Act specifies differing requirements for how the different standards are set
 - For example, the CAA explicitly requires that cellulosic standard be set on a projection of availability. This differs from statutory language relating to the other standards (e.g., advanced, biodiesel.)

Statutory goals versus actual volumes



RIN Prices (OPIS Data)



More Recent RIN Prices Data (OPIS)



Small Refinery Exemptions

- The statute established “temporary” exemptions from RFS volume obligations for small refineries (< 75,000 crude barrels per day)
 - Statutory (EPA/EISA) exemption for all small refineries through 2010
 - Extension possible for 2011-2012 based on DOE study
 - Since then, refineries may petition EPA annually for extension of the exemption
 - 10th Circuit ruled that extensions must be continuous; this is now before the Supreme Court
 - Note: small *refineries* are different from small *refiners*; many small refineries are actually owned by large refiners (e.g., Andeavor, Chevron, Exxon, Phillips 66)
- EPA may grant an extension if it finds that the petitioning small refinery will suffer “disproportionate economic hardship” from complying with its RFS obligations
 - Statute does not define disproportionate economic hardship
 - 10th Circuit clarified that the economic hardship must be due to the RFS
- The statute directs EPA to consult with DOE, consider the DOE study and other economic factors, but authority and responsibility for decisions resides with EPA
 - EPA shares all financial information it receives from petitioners with DOE and DOE (b) (5)
[REDACTED]
[REDACTED]
 - (b) (5) [REDACTED]
[REDACTED]

Small Refinery Exemption data (from website, as of 1/20/21)

Table 1: Exempted Volume of Gasoline and Diesel Each Compliance Year...

Compliance Year	Estimated Volumes of Gasoline and Diesel Exempted (million)	Estimated Renewable Volume Obligations (RVO) Exempted (million)
2011	n/a	n/a
2012**	n/a	n/a
2013	1,980	190
2014	2,300	210
2015	3,070	290
2016	7,840	790
2017	17,050	1,820
2018	14,420	1,540
2019	1,390	150
2020	0	0

Table 2: Summary of Small Refinery Exemption Decisions Each Compliance Year *

Compliance Year	Number of Petitions Received	Number of Grants Issued	Number of Denials Issued	Number of Petitions Declared	Number of Petitions Withdrawn	Number of Pending Petitions
2011	42	24	13	3	0	2
2012	41	23	13	3	0	2
2013	30	8	18	0	1	3
2014	28	8	16	0	0	4
2015	28	7	17	1	0	3
2016	29	19	7	0	1	2
2017	37	35	0	0	1	1
2018	44	32	4	2	3	3
2019	32	2	0	0	0	30
2020	15	0	0	0	0	15

Current activity (as of February 2021)

- Decision on 2019 and 2020 SRE petitions
- 2021 and 2022 Annual Volume Rules
 - Sets volumes for 2021 and 2022
 - Could also include reconsideration of 2020 volumes
 - Target for proposal issuance: June 2021
 - Target for final rule: November 30, 2021
- 2016 Remand response
- “Set” rule to establish RFS volumes for 2023+
 - Target for proposal issuance: (b) (5)
 - Target for final rule: (b) (5)
- eRINs and other pathway/registration determinations

Additional Materials



The E10 Blendwall

- E10 (gasoline with up to 10% ethanol) can lawfully be used in all vehicles and engines designed to operate on gasoline.
- 100% utilization of E10 as gasoline in the US has typically been referred to as the “blendwall”
- To blend additional ethanol beyond 100% utilization of E10 will require the manufacture and sale of higher ethanol blends like E15 and E85.
- Currently there are infrastructure and other limitations on the volume of E15 and E85 that can be consumed in the US.
 - Retail: ~3,500 retail stations currently equipped to dispense E85 and 2,300 for E15
 - Vehicles: Only certified Flex Fuel Vehicles (FFVs) can lawfully use E85. There are approximately 10 -12 million FFVs on the road today but they fill on E85 <1% of the time. EPA has prohibited the use of E15 in MY2000 and older vehicles and all non-road vehicles and engines.
 - Comparatively little E15 being sold

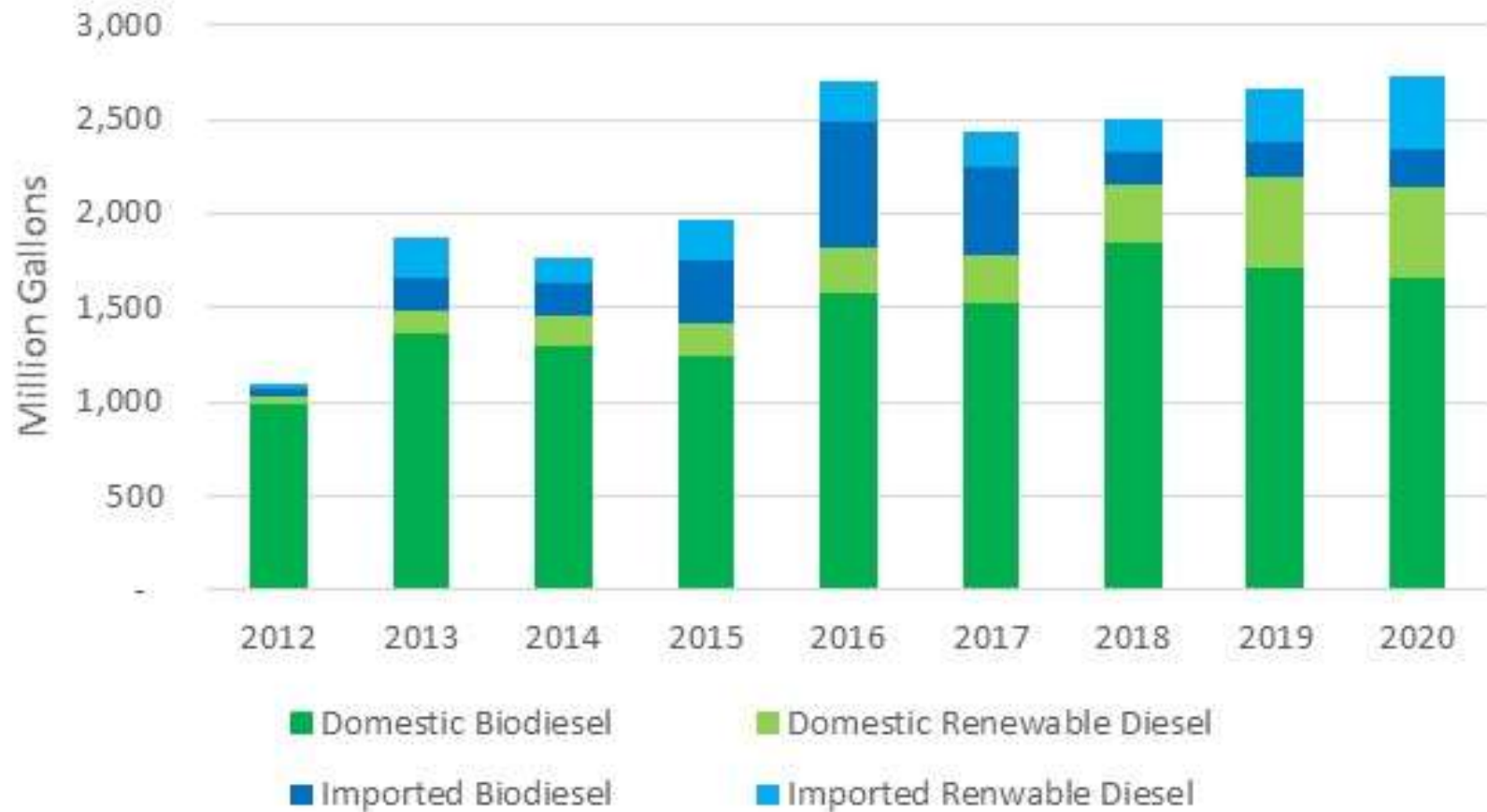
The E10 Blendwall (Cont.)

- E10 blendwall varies with gasoline demand
 - E10 blendwall was approximately 14.3 and 12.4 billion gallons in 2019 and 2020 respectively
 - E10 blendwall is projected to be 13.3 and 13.8 billion gallons in 2021 and 2022 respectively
- Consequently, ethanol cannot meet the 15 billion gallon conventional biofuel volume
 - Even if all new/rebuilt service stations every year were made E15 compatible, the increased volume would be at approximately 150 mgal
- For the last 3+ years, biodiesel, including palm biodiesel from Malaysia/Indonesia, has increased to fill the void

Volume Waivers/Adjustments

- Statute provides authority to adjust volumes set by Congress as part of annual rule process
 - Cellulosic waiver authority
 - Must Reduce the cellulosic volume to the projected actual production
 - Must take “neutral aim at accuracy” in determining production
 - May reduce advanced and total standards by up to the same amount
 - General waiver authority
 - Allows the Administrator to waive the RFS volumes, in whole or in part, based on a determination that implementation of the program would severely harm the economy or environment of a State, a region, or the United States; or based on inadequate domestic supply
- We have used both authorities in past rules
 - Cellulosic authority every year to lower the cellulosic standard
 - Cellulosic authority for 2014-20 to lower the advanced and total standards
 - General authority for 2014-16 to further lower the total standard
 - Use of general waiver authority vacated by court for 2016 standard.
- We have also denied petitions for waiver (requests in 2008, 2012, 2016)

Biodiesel and Renewable Diesel Production and Imports



From: Cathy Tortorici - NOAA Federa
Subject: Re: TA on RFS - EPA, FWS, NMFS
To: Burch, Juia
Cc: Burkholder, Das; Machiee, Pau; Michael, Lauren; Korotney, David; Li, Ry and (Shengzhi); Hambright, Rosemary; Nancy Brown-Kobi - NOAA Federa; Aubrey, Craig; Karen Myers; Nelson, Karen; Keith Pau; David Baldwin - NOAA Federa
Sent: February 23, 2021 11:48 AM (UTC-05:00)

Julia -

I am adding David Baldwin to our meeting. He is one of my staff that is working on our pesticides consultation with EPA. He is extremely familiar with the crop data layers you are working with so I think his getting involved would be helpful here.

I sent David the PPT you just gave to us as background on this effort.

Thanks so much and looking forward to our next chat!

Cathy T.

On Tue, Feb 23, 2021 at 11:28 AM Burch, Julia <Burch.Julia@epa.gov> wrote:

Thanks for completing the doodle poll. This time works for the most folks.

Materials to follow.

Thanks!

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Cathy Tortorici

Chief, ESA Interagency Cooperation Division

Office of Protected Resources

NOAA's National Marine Fisheries Service

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Silver Spring, MD 20910

(w) 301.427.8495

(c) 301.602.2193

cathy.tortorici@noaa.gov

From: David Baldwin - NOAA Federal
Subject: Re: TA on RFS - EPA, FWS, NMFS
To: Cathy Tortorici - NOAA Federal
Sent: February 23, 2021 12:09 PM (UTC-05:00)

Cathy,

I haven't seen an attachment. Were you going to send the ppt in a separate email?

David

On Tue, Feb 23, 2021 at 8:47 AM Cathy Tortorici - NOAA Federal <cathy.tortorici@noaa.gov> wrote:
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David H. Baldwin, Ph.D.

Biologist (Endangered Species)

NOAA Fisheries

Office of Protected Resources

email: David.Baldwin@noaa.gov

cell: (b) (6)

From: Cathy Tortorici - NOAA Federal
Subject: Re: TA on RFS - EPA, FWS, NMFS
To: David Baldwin - NOAA Federal
Sent: February 23, 2021 12:36 PM (UTC-05:00)

I am referring to the PPT I already sent to you and the rest of the pesticides crew,

On Tue, Feb 23, 2021 at 12:08 PM David Baldwin - NOAA Federal <david.baldwin@noaa.gov> wrote:
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David

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From: David Baldwin - NOAA Federal
Subject: Re: TA on RFS - EPA, FWS, NMFS
To: Cathy Tortorici - NOAA Federal
Sent: February 23, 2021 2:53 PM (UTC-05:00)

Cathy,

Sorry. Got it. I failed to make the connection.

David

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From: Burch, Julia
Subject: RE: TA on RFS - EPA, FWS, NMFS
To: cathy.tortorici@noaa.gov
Sent: February 23, 2021 11:53 AM (UTC-05:00)

Sounds good! Thanks!

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Sent: Tuesday, February 23, 2021 11:48 AM
To: Burch, Julia <Burch.Julia@epa.gov>
Cc: Burkholder, Dallas <burkholder.dallas@epa.gov>; Machiele, Paul <machiele.paul@epa.gov>; Michaels, Lauren <Michaels.Lauren@epa.gov>; Korotney, David <korotney.david@epa.gov>; Li, Ryland (Shengzhi) <Li.Ryland@epa.gov>; Hambright, Rosemary <Hambright.Rosemary.E@epa.gov>; Nancy Brown-Kobil - NOAA Federal <nancy.brown-kobil@noaa.gov>; Aubrey, Craig <craig_aubrey@fws.gov>; Karen Myers <karen_myers@fws.gov>; Nelson, Karen <nelson.karen@epa.gov>; Keith Paul <keith_paul@fws.gov>; David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
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Cc: Keith Paul
Sent: February 23, 2021 11:23 AM (UTC-05:00)

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options<https://teams.microsoft.com/meetingOptions/?organizerId=439df38b-fa0a-453b-8c1a-bb5bfcc76647&tenantId=88b378b3-6748-4867-acf9-76aacbeca6a7&threadId=19_meeting_OTdhNzdkMDUtMzQxNy00YTdkLTg5ZTItMTFiNTI4YTJhNGZi@thread.v2&messageId=0&language=en-US>

From: Korotney, David
Subject: RE: Materials to review for our 3/23/21 meeting at 2 pm?
To: cathy.tortorici@noaa.gov; Burch, Julia; Burkholder, Dallas; Craig_Aubrey@fws.gov; Hambright, Rosemary; Karen Myers; Keith Paul; Li, Ryland (Shengzhi); Machiele, Paul; Michaels, Lauren; Nancy Brown-Kobil - NOAA Federal; Nelson, Karen; David Baldwin - NOAA Federal
Sent: March 22, 2021 3:24 PM (UTC-04:00)
Attached: Endangered Species Act No Effect Finding for the 2020 Final Rule.pdf, Corn and use causa diagram.xlsx

Attached are two things we intend to go over. We may have one or two additional things that we show on our screen.

From: Cathy Tortorici - NOAA Federal <cathy.tortorici@noaa.gov>
Sent: Monday, March 22, 2021 2:23 PM
To: Burch, Julia <Burch.Julia@epa.gov>; Burkholder, Dallas <burkholder.dallas@epa.gov>; Craig_Aubrey@fws.gov; Hambright, Rosemary <Hambright.Rosemary.E@epa.gov>; Karen Myers <karen_myers@fws.gov>; Keith Paul <keith_paul@fws.gov>; Korotney, David <korotney.david@epa.gov>; Li, Ryland (Shengzhi) <Li.Ryland@epa.gov>; Machiele, Paul <machiele.paul@epa.gov>; Michaels, Lauren <Michaels.Lauren@epa.gov>; Nancy Brown-Kobil - NOAA Federal <nancy.brown-kobil@noaa.gov>; Nelson, Karen <nelson.karen@epa.gov>; David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Subject: Materials to review for our 3/23/21 meeting at 2 pm?

Dear all -

I was wondering if there were any materials we should be reviewing in preparation for our meeting this week.

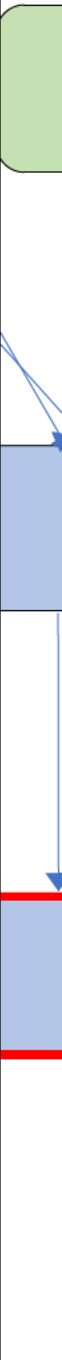
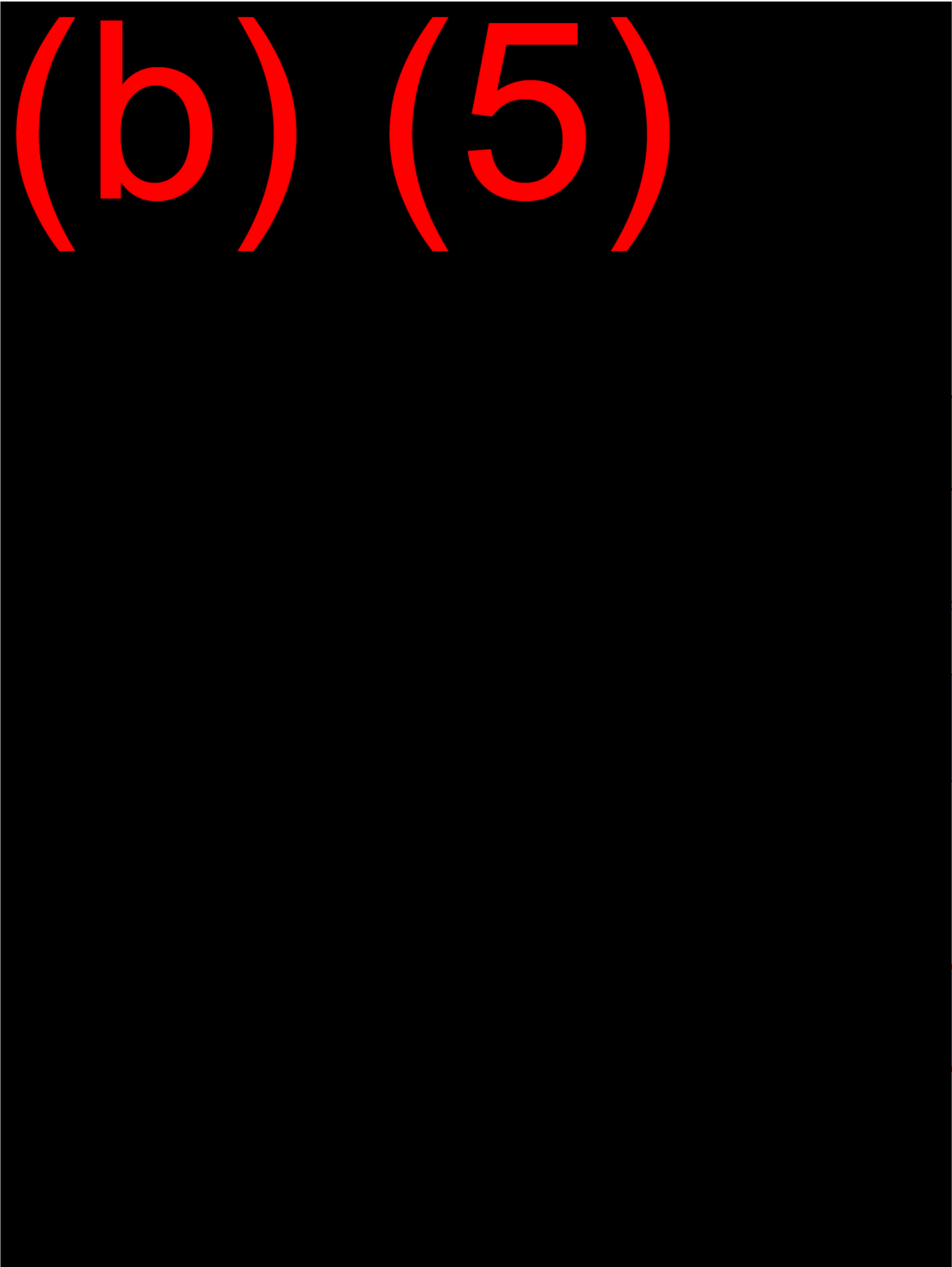
Thanks so much -

Cathy T.

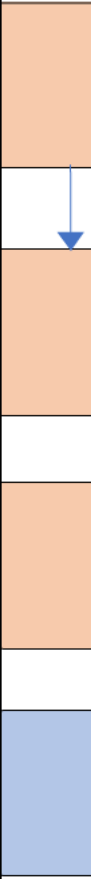

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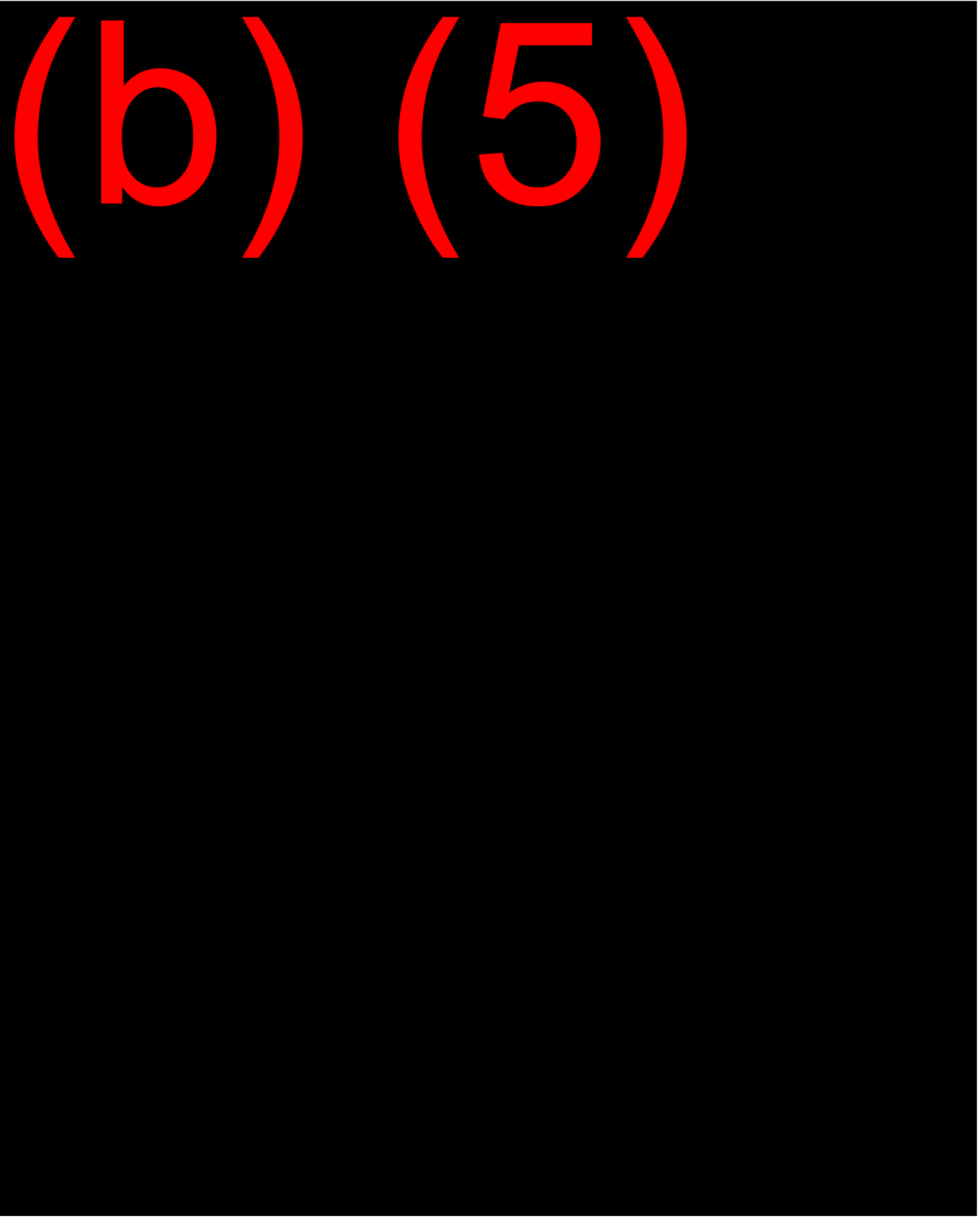
(b) (5)



(b) (5)



(b) (5)



MEMORANDUM

Subject: Endangered Species Act No Effect Finding for the 2020 Final Rule

To: EPA Air Docket EPA-HQ-OAR-2019-0136

From: EPA staff

Date: December 2019

In this memorandum, EPA determines that the 2020 RFS standards¹ final rule has no effect on threatened and endangered species (collectively “listed species”) or their critical habitats. We make this finding under Section 7(a)(2) of the Endangered Species Act (ESA) and implementing regulations promulgated by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (collectively “the Services”) at 50 CFR Part 402. Today’s finding is similar to the no-effects finding we issued in promulgating the 2019 RFS standards but is based on a new and searching evaluation of the entire record before us.

Section A of this memo explains the governing regulatory framework for consultation in light of the new ESA consultation regulations and the D.C. Circuit’s recent opinion regarding ESA consultation in the 2018 RFS annual rule. Section B articulates EPA’s analysis of the fuels and agricultural markets, including updated data on the production, consumption, and export of biofuels and underlying feedstocks. Section C considers other recent environmental analyses of biofuels, including EPA’s June 2018 *Biofuels and the Environment: Second Triennial Report to Congress* and other studies. We explain why we have found that the 2020 standards rule causes no-effects notwithstanding the general association between biofuels and environmental impacts we and others have previously described.

A. Legal and Regulatory Framework

Pursuant to section 7(a)(2) of the ESA and the Services’ regulations, 50 CFR 402.14(a), federal agencies are required to consult with the Services on actions they authorize, fund, or carry out that may affect listed species or designated critical habitat. Consultation is not required where the action has no effect on such species or habitat.

On August 27, 2019, the Services promulgated new, binding regulations regarding ESA consultation. 84 FR 44976 (Aug. 27, 2019). The regulations define “effects of the action” as “all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur *but for* the proposed action and it is *reasonably certain to occur*” (emphasis added). 50 CFR 402.02 (“Effects of the Action”). In other words, “[t]o be considered an effect of a proposed action, a consequence must be caused by

¹ Throughout this memorandum, we use the term “2020 RFS standards” to refer to the four volume requirements established in the 2020 final rule, the percentage standards associated with these volumes, and the biomass-based diesel required volume for 2021.

the proposed action (i.e., the consequence would not occur but for the proposed action and is reasonably certain to occur).” 50 CFR 402.17(b).

“A conclusion of reasonably certain to occur must be based on clear and substantial information, using the best scientific and commercial data available.” 50 CFR 402.17(a), (b). That is, “there must be a firm basis to support a conclusion that a consequence of an action is reasonably certain to occur. The determination of a consequence to be reasonably certain to occur must be based on solid information and should not be based on speculation or conjecture.” 84 FR 44977/3. The regulations also provide a non-exhaustive list of considerations for determining that a consequence is not caused by the agency action: the consequence is so remote in time or space from the action that it is not reasonably certain to occur, or “only reached through a lengthy causal chain that involves so many steps as to make the consequence not reasonably certain to occur.” 50 CFR 402.17(b)(1)-(3).

The new regulations also removed the prior regulatory terms “direct and indirect effects” and “interdependent or interrelated activity.” However, the Services clarified that the new regulations were not thereby intended to make a substantive change, but only to streamline the regulation, *see, e.g.*, 84 FR 44977/1, and noted that these terms still “can be useful” in analyzing the effects of an action, *id.* at 44988/3.

On September 6, 2019, the D.C. Circuit resolved challenges to the 2018 RFS annual rule in *American Fuel & Petrochemical Manufacturers v. EPA*, 937 F.3d 559 (D.C. Cir. 2019) (*per curiam*). In doing so, the Court found that environmental petitioners had standing to litigate EPA’s alleged failure to consult under the ESA, based on declarations submitted by the petitioners’ members, as well as studies associating biofuels with land-use changes in past years. These studies included EPA’s report *Biofuels and the Environment: Second Triennial Report to Congress*. Many of these studies correlated biofuel production with land-use change patterns prior to 2016. For standing purposes, the Court reasoned that “the 2018 Rule is simply the next iteration of [RFS] standards” and thereby inferred that the rule caused injury to environmental petitioners. *Id.* at 595.

At the time, the Court rejected petitioners’ arguments that “the evidence conclusively establishes that the 2018 Rule ‘may affect’ listed species or critical habitat.” *Id.* at 598. Instead, the Court remanded the rule to EPA and ordered the agency to “develop the record and decide the issue in the first instance on remand.” *Id.* In addition, the Court clarified that EPA’s duty was to specifically assess the impacts of the 2018 Rule based on the record before it, not to engage in an ESA effects analysis of the entire RFS program. *See id.* at 591, 597-98.² Consistent with the Court’s direction regarding the 2018 rule, EPA has, in promulgating the 2020 rule, considered the evidence before us and determined that this rule has no effect on listed species or their critical habitats. Our conclusions are specific to the 2020 RFS standards.³

² EPA is still considering the Court’s remand of the 2018 rule, and is not taking final action on that remand in the 2020 standards final rule.

³ EPA has carefully considered the comments raised during the periods for public comment (including the public hearings) for this rulemaking. We have not identified any comments that argue, with reasonable specificity, that EPA is obligated to consult under the ESA in promulgating the 2020 standards rule. We did receive a comment suggesting that consultation with the Services on the 2020 rule is not required and generally supporting our findings here. See Comment available at EPA-HQ-OAR-2019-0136-0726.

B. No Effect Determination

EPA determines that it need not consult with the Services because the 2020 RFS standards will have no effect on listed species or their critical habitat. That is, there are no effects to listed species or critical habitat that would not occur but-for the 2020 RFS standards and that are reasonably certain to occur. See 50 CFR 402.02 (“Effects of the action”). In reaching this conclusion, we have assessed the 2020 RFS standards independent of past annual rules.⁴

First, the 2020 RFS standards do not directly affect listed species or critical habitat. The 2020 RFS standards require the market to use renewable fuels as transportation fuel, heating oil, or jet fuel in the U.S. in 2020. They do not require, authorize, fund, or carry out the production of any specific biofuel or crop, the use of any land that is critical habitat, or the taking of any listed species or other activity that may affect any listed species. Decisions on what type of feedstock to use for biofuel production, where such feedstocks are grown, the types and volumes of agricultural inputs such as fertilizer or pesticide to use in growing the feedstocks, and what types of renewable fuel will ultimately be produced, are made by third parties, and any on-the-ground activities to implement and carry out those decisions are undertaken by such third parties.⁵ Moreover, some third parties, notably farmers who decide how much and where they plant crops, are not regulated by the RFS program at all. All the above decisions are also influenced by many market factors beyond the RFS standards, some of which we discuss further below.

Second, we have also considered whether, beyond the direct effects, any consequences on listed species or critical habitat are reasonably certain to occur but for the 2020 RFS standards, that is whether any such consequences are “caused” by the 2020 RFS standards.⁶ We perform this analysis for each of the three major types of biofuels expected to be used to satisfy the 2020 RFS standards: ethanol made from corn starch, the primary conventional renewable fuel used under the RFS; advanced biofuels with a focus on biodiesel and renewable diesel made from oilseeds (primarily soy and canola), which are the primary advanced biofuels used under the RFS; and cellulosic biofuels. For each category of biofuel, we conclude that the 2020 RFS standards do not cause any effects to listed species or critical habitats.

⁴ We would reach the same no-effects conclusion were we to assess the relatively small volume increase relative to the 2019 final rule volumes. We note that in relation to the 2019 final rule, the 2020 rule increases only the cellulosic biofuel volume, with corresponding increases to the advanced and total volumes. There is no increase in the implied non-cellulosic advanced or conventional volumes. The entirety of the cellulosic biofuel volume increase is due to CNG/LNG derived from landfill biogas. As we explain in section B.3, the production of this biofuel is not expected to have any impacts on listed species or critical habitats. (The BBD volume also increases from 2019 to 2020, albeit not from 2020 to 2021. But in any event, the BBD volume for these years is expected to be non-binding, with BBD volumes instead being driven by the advanced biofuel standard as explained in section VII of the 2020 final rule, and section VI of the 2019 final rule, 83 FR 63704, 63734-63739. Therefore, in considering the advanced biofuel volume we have also considered the BBD volume, as we do not expect that renewable fuel production in 2020 and 2021 would be any different in the absence of the BBD volume requirement.)

⁵ Corn and oilseed plantings, for fuel or food, occur on private land and are not authorized, funded, or carried out by the 2020 RFS standards. While these activities are not caused by or attributable to the 2020 RFS standards and are not reasonably certain to occur, EPA notes that Section 9 of the ESA – which prohibits the take of individuals of most listed species – and the permitting scheme established under Section 10 of the ESA may provide protection for listed species as future non-federal activities become reasonably certain.

⁶ Throughout the remainder of this section B, we use the term “cause” as a term of art to refer to the concept of but-for cause with reasonable certainty, as defined in the Services’ regulations at 50 CFR 402.02 (“Effects of the action”). In sections A and C, we use “cause” with its ordinary meaning.

Generally, we find that for each of the three major types of biofuels, the 2020 standards would not be the but-for cause of any impacts on listed species or critical habitat. In any event, even if the 2020 standards were the but-for cause of any impacts, those impacts would not be reasonably certain to occur. Given the highly attenuated causal chain between the 2020 standards and potential impacts on listed species and critical habitat, any such impacts would be “only reached through a lengthy causal chain that involves so many steps as to make the consequence not reasonably certain to occur.” 50 CFR 402.17(b)(3). In addition, we are not aware of “clear and substantial information, using the best scientific and commercial data available” that would support a conclusion that such effects are reasonably certain to occur. 50 CFR 402.17(a). To the contrary, our analysis of the data before us indicates that any such impacts would not occur but-for the 2020 standards, and certainly not with reasonable certainty.

For corn ethanol, we find that the 2020 RFS standards do not cause any increase in corn ethanol production and therefore do not cause any increase in corn cultivation in the United States. We believe that this reason independently justifies our “no effect” finding. However, even if corn ethanol production and corn cultivation were to be affected to some degree by the 2020 RFS standards, any specific effects on listed species or critical habitat from those activities would still not be caused by the 2020 RFS standards.

For biodiesel and renewable diesel produced from oilseeds, available information (such as the current price for D4 and D5 RINs) indicates that the 2020 RFS standards will result in their higher use and production than in the absence of the rule. Nonetheless, we find that the 2020 RFS standards do not cause any effects on listed species or critical habitats. There are three reasons for this: (1) biodiesel and renewable diesel production to satisfy the 2020 RFS standards is not expected to cause increased cultivation of oilseeds because oilseed cultivation is primarily driven by other factors; (2) even were biodiesel and renewable diesel production to generally impact oilseed cultivation, the 2020 RFS standards do not impact oilseed cultivation due to unique regulatory and market circumstances in 2020; and (3) as with corn ethanol, even if there were any changes in oilseed cultivation, any specific impacts on listed species or critical habitat from oilseed cultivation would still not be caused by the 2020 RFS.

For cellulosic biofuel, available information (such as the current price for D3 RINs) indicates that the 2020 RFS standards will likely increase the use and production of cellulosic biofuels. However, we find that the 2020 RFS standards do not cause effects on listed species or critical habitats, because: (1) cellulosic biofuel is almost entirely sourced by recovering biogas from landfills, and that is not expected to affect listed species or their critical habitat; (2) a very small portion of cellulosic biofuel is produced from crop or woody residues, which are not expected to have any impact on crop cultivation decisions or the habitat of listed species at the quantity used in 2020; and (3) as with the other biofuels, even were there to be environmental impacts associated with these processes, any specific impacts on listed species or critical habitat from cellulosic biofuel production or cultivation would still not be caused by the 2020 RFS standards.⁷

⁷ We have also considered other potential environmental impacts of the 2020 standards. See, e.g., Response to Comments section 2.1.3 (severe environmental harm), 8.2 (environmental impacts generally). None of them indicate that this rule may affect listed species or critical habitats.

1. Conventional Renewable Fuel (Corn Starch Ethanol)

The 2020 RFS standards require the use of specified volumes of four categories of renewable fuel. While many stakeholders often refer to a 15-billion-gallon requirement for corn ethanol, neither EISA nor EPA's annual rules contain such a requirement. Nor is there a specific requirement for conventional (non-advanced) renewable fuel, the only category for which ethanol produced from corn starch can qualify, although EISA implies a conventional renewable fuel volume in the difference between the total renewable fuel volume and the advanced biofuel volume. In fact, multiple types of renewable fuels produced from a variety of feedstocks can be used to satisfy the total renewable fuel volume requirements, including fuels such as ethanol, biodiesel, renewable diesel, butanol, compressed natural gas, and liquefied natural gas. However, historically, ethanol produced from corn starch has been the predominant fuel used to satisfy the implied requirement for conventional renewable fuel, and we anticipate that it will continue to be the predominant fuel used to satisfy this implied volume requirement in 2020.

Since 2017, the implied conventional renewable fuel requirement has been 15 billion gallons. While this volume is higher than the volume of ethanol used in the U.S. as transportation fuel in recent years, we do not expect that the 2020 RFS standards will cause greater production of ethanol from corn starch than would otherwise occur. This is because demand for corn ethanol, both in the U.S. and globally, is strong for other economic reasons.⁸ It is this demand in the U.S. and abroad, which exceeds the implied volume for conventional renewable fuel in 2020, that is in turn driving corn ethanol production in the U.S. and thus driving the production of corn to produce ethanol in the U.S. As discussed in greater detail below, the two primary drivers of this demand are the use of ethanol in E10 blends as an octane booster domestically and demand for ethanol from foreign countries. We thus do not expect that this demand would change appreciably in the absence of 2020 RFS standards, as discussed below.

Currently, almost all gasoline in the U.S. contains 10% ethanol, and this is unlikely to change in the near future even in the absence of the RFS program. The gasoline refining and distribution system, driven by the favorable blending economics of ethanol over the last decade, has invested heavily to transform itself to rely on the use of 10% ethanol. The blending of ethanol into gasoline is currently a profitable practice for refiners and blenders due to the relatively low cost of ethanol and the significant value of ethanol's high octane rating.^{9, 10} To

⁸ See World Fuel Ethanol Consumption by Year. Indexmundi.

⁹ On December 12, 2019, EIA reported (www.eia.gov/todayinenergy/prices.php) wholesale spot gasoline (RBOB) prices in different markets ranging from \$1.53-1.63 per gallon in comparison to a Chicago Board of Trade (CBOT) spot price of ethanol at \$1.32 per gallon. Thus, even without the considerable added octane blending value of ethanol, current market prices favor blending ethanol into gasoline to create E10 (where ethanol's lower energy content is not transparent to consumers). Because ethanol is less expensive than gasoline, blending up to ten percent ethanol into gasoline reduces the overall cost for blended gasoline.

¹⁰ See EIA AEO 2019, Table A12: Petroleum and other Liquid Prices, Reference Case, projecting increases in crude oil prices from \$74/bbl in 2018 to \$82/bbl in 2025, and \$108/bbl in 2050, and USDA Long-Term Projections, October 2019, Table 5: U.S. Corn long-term projections, projecting slight increases from \$3.61/bushel in 2018/2019 up to \$3.80/bushel in 2019/2020 and \$3.55/bushel in 2025/2026. These projections indicate that the market dynamics are unlikely to change. That is, given that corn prices are expected to remain relatively stable over these time periods despite significant increases in crude oil prices, the favorable economics of blending ethanol in E10 are expected to continue.

better understand the blending economics of renewable fuels, EPA commissioned a study to assess biofuel use in future years in the absence of RFS requirements.¹¹ This study concluded that even in the absence of the RFS standards refiners and blenders were likely to continue to blend ethanol into gasoline at a 10% rate due to the favorable economics of ethanol as a gasoline blending component and octane enhancer. These findings are similar to those we made in response to petitions for a waiver of the 2012 and 2013 RFS standards on the basis of severe economic harm associated with a drought, where we concluded that the RFS standards in the latter part of 2012 and early part of 2013 would not be expected to drive ethanol use.¹²

Over the last dozen years or so, the entire gasoline production and distribution system has also invested billions of dollars to adjust itself to the use of E10 ethanol blends. Refiners have modified their process units and operations to produce sub-octane gasoline blendstocks that cannot be sold as gasoline without the subsequent addition of ethanol.¹³ Pipelines likewise have shifted their physical assets and operations to distribute these blendstocks instead of finished gasoline. Terminals across the country have been modified to receive and store shipments of ethanol and blend it into these blendstocks. Rail lines and trucking fleets have been expanded to accommodate the shipment of ethanol, which is approximately 10% of our nation's gasoline supply, through means other than pipelines. To reverse course and go back to refining and distributing ethanol free finished gasoline would require much more than a reduction in the 2020 RFS standards; it would require a market-wide decision that would then take years and likely billions of dollars to implement. This would require a significant economic driver over a sustained period. Thus, even if the blending of ethanol in E10 blends is unexpectedly unfavorable economically in 2020 (and there is no reason to believe that this would be the case) it would likely still continue in 2020 due to these market factors. Domestic demand for ethanol in E10 blends is projected to be approximately 14.3 billion gallons in 2020. The vast majority of the ethanol projected to be used in the U.S. in 2020 is expected to be used as E10. Thus, hypothetically, were EPA to waive all of the RFS requirements for 2020, we would expect domestic use of ethanol in the U.S. to only decrease slightly as a result of decreased sales of higher level ethanol blends such as E15 or E85, which do not receive the same octane benefit as ethanol blended as E10.^{14 15}

While the 2020 RFS standards may have some minor impacts on corn ethanol use, primarily for blends greater than E10, we find that they will not cause any impact on corn ethanol production. Consumption of ethanol in the U.S. has remained relatively steady since

¹¹ "Modeling a No-RFS Case," ICF Incorporated; Work Assignment 0,1-11, EPA contract EP-C-16-020; July 17, 2018. We also received two studies in comments that was consistent with the conclusion that E10 would continue to be used in the U.S. even in the absence of the RFS program ("An Assessment of the Renewable Fuel Standard Using EVA-NEMS," Energy Ventures Analysis, prepared for The Fueling American Jobs Coalition, July 17, 2019, and; "The RFS and Ethanol Production: Lack of Proven Impacts to Land and Water," prepared by Ramboll for Growth Energy, August 18, 2019. See Comment available at EPA-HQ-OAR-2019-0136-0726.

¹² See 77 FR 70752.

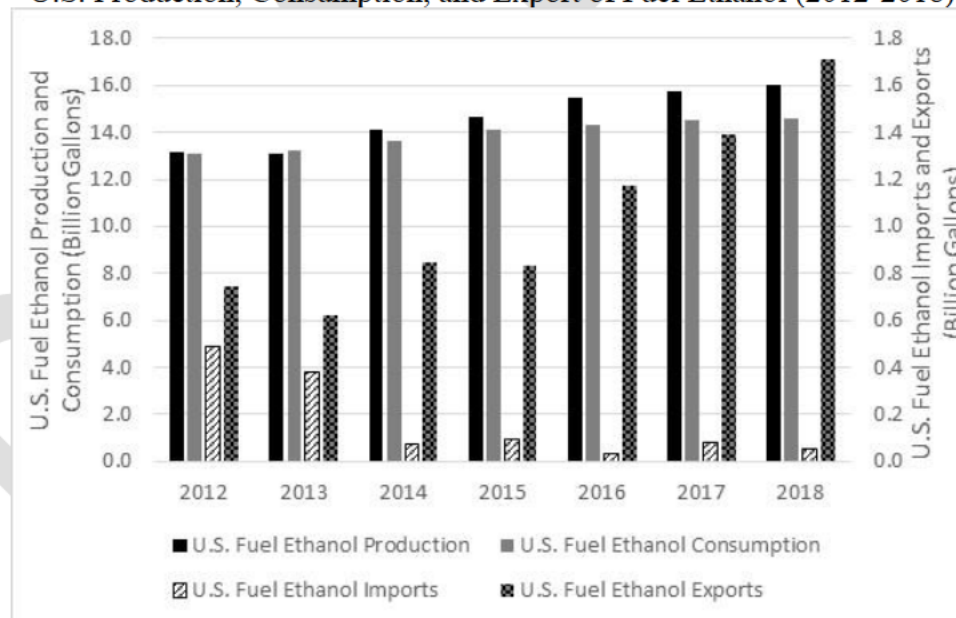
¹³ See comments from PBF Energy, EPA-HQ-OAR-2017-0091-4702, CVR Energy, EPA-HQ-OAR-2017-0091-4888, REG, EPA-HQ-OAR-2017-0091-4500.

¹⁴ See "Updated market impacts of biofuels in 2020," memorandum from David Korotney to docket EPA-HQ-OAR-2018-0167.

¹⁵ Even then, some E15 and E85 use would continue due to ongoing Federal, State, and Local requirements and incentives, other than RFS standard, for the use of such fuels and taking advantage of the infrastructure already in place.

reaching the E10 blendwall in 2013, as the production of corn starch ethanol in the U.S. has continued to increase well beyond the volumes required by the RFS standards. Ethanol production in the U.S. exceeded the implied maximum statutory volume (15 billion gallons) in 2016 and has continued to increase since that time (see Figure 1 below). In 2018, ethanol production in the U.S. reached approximately 16.0 billion gallons. This increasing production is not being driven by the RFS requirements, as the production levels far exceed the volumes used in the United States and available for RFS compliance, and instead appear to be driven by favorable export markets for corn ethanol. As depicted in Figure 1, below, U.S. ethanol producers have exported increasing volumes of corn ethanol to overseas markets in recent years. We currently expect that the production of ethanol for export markets will continue in 2020, as we are not currently aware of any market dynamics that would result in the economics of producing ethanol for export markets being unfavorable in 2020. This is especially the case for ethanol plants that have already been constructed and must continue to produce ethanol to provide a return on this capital investment.¹⁶

Figure 1
U.S. Production, Consumption, and Export of Fuel Ethanol (2012-2018)



Data from EIA and EMTS

Since the primary drivers for ethanol production in 2020 are domestic demand for ethanol in E10 blends for non-RFS economic reasons and foreign demand for ethanol, we have concluded that the 2020 RFS standards will not cause any impact on corn ethanol production. Therefore, the 2020 RFS standards will not cause any impact on corn production in 2020.

¹⁶ According to an economic model of corn starch ethanol production created by Iowa State University, the depreciation and interest payments an average corn ethanol plant with a nameplate capacity would be approximately \$0.17 per gallon of ethanol produced, or \$17.3 million per year. The economic model is available online at: <https://www.extension.iastate.edu/agdm/energy/xls/d1-10ethanolprofitability.xlsx>

Furthermore, even if the 2020 RFS standards were to drive some corn starch ethanol production in 2020, it is still not reasonably certain whether domestic corn plantings would be any different since corn supply could simply shift to other markets. Corn plantings are a function of a large number of worldwide agricultural sector market factors, including markets in food and feed.¹⁷ Unless domestic corn growers are the marginal supply of corn on a global scale (which has not been the case historically),¹⁸ decreased demand for corn for ethanol production would not result in decreased corn production in the U.S. with reasonable certainty, but could instead result in decreased production in foreign markets.

Further, even if corn plantings were driven by the 2020 RFS standards, there is no evidence that a particular parcel of land would be planted with corn but-for the 2020 RFS, much less that any such effects are reasonably certain to occur. First, as we explained above, the 2020 RFS standards do not directly require, authorize, fund, or carry out the planting of corn. Decisions on what type of feedstock to use for biofuel production, where such feedstocks are grown, the types and volumes of agricultural inputs such as fertilizer or pesticide to use in growing the feedstocks, and what types of renewable fuel will ultimately be produced, are made by third parties. In addition, the farmers directly responsible for cultivating corn are not regulated by the RFS program at all.

Second, while satellite imagery can provide information on the types of crops grown on a given parcel of land in a given year, there currently exists no nationwide system for tracking how crops from a particular parcel of land are used. As a result, based on the record before us, there is no way to determine if the crops grown on a particular parcel were used for biofuel production versus some other use such as food, animal feed, or export.

Third, even were it possible to attribute a particular acre of corn to biofuel production, it is not possible to attribute such production to a qualifying RFS use in the United States as opposed to exports or another non-qualifying use. As noted above, biorefineries have economic incentives to produce biofuels regardless of the RFS standards. This lack of granularity and tracking of crops for particular uses means that any estimates of localized impacts on the environment from crops grown for biofuel are highly uncertain. Thus, while some work has been done correlating crop use for biofuel production using proximity to a biofuel production facility, those analyses do not evaluate whether that biofuel is used domestically (and thus can be counted towards compliance with the 2020 RFS standards) or exported. Such analyses remain probabilistic and limited in scope, and we do not believe that they are sufficient to be able to identify impacts on particular parcels of land.

Fourth, even if one were to link particular corn kernels grown on a particular parcel of land to ethanol production, and such production in turn to a qualifying RFS use, the end use of crops produced on the same parcels of land can and does vary from year to year. Thus, it is speculative whether any connection established for prior years would remain in 2020.

¹⁷ Laca, Anna-Lisa. *Factors Influencing Global Grain Production*. Agweb.com. November 28, 2017.

¹⁸ Meade, B., Puricelli, E., McBride, W., Valdes, C., Hoffman, L., Foreman, L., & Dohlman, E. *Corn and Soybean Production Costs and Export Competitiveness in Argentina, Brazil, and the United States*. United States Department of Agriculture Economic Research Service. June 2016.

Fifth and finally, even if reducing the 2020 RFS standards were to lead to decreases in corn production, these changes would likely not reverse the impacts of land-use decisions made in prior years (whether those prior decisions were the result of increased biofuel production or not). Once acres have been converted to cropland, they do not quickly revert to the condition of their former state as native grassland, forest, or wetlands. In reality, once the expense of clearing the land has occurred, and investments have been made in equipment and infrastructure for farming that land so that land tends to stay in agricultural use. Therefore, continued cultivation of that converted land is likely to occur even if lower 2020 RFS standards resulted in a decreased demand for feedstocks for biofuel production.

In summary, we conclude that with respect to corn ethanol, the 2020 RFS standards do not cause any effects on listed species or their critical habitats. This is because the 2020 RFS standards do not cause any effects on the production of ethanol in the U.S. and thus production of corn used as an ethanol feedstock. We further note that even if the 2020 RFS standards did impact corn ethanol or corn production in 2020, any specific effects on listed species or critical habitat from those activities would still not be caused by the 2020 RFS standards.

2. Biodiesel and Renewable Diesel

While there are no requirements under the RFS program specific to ethanol, the statute does contain a mandate for biomass-based diesel. Biodiesel and renewable diesel are used to satisfy the biomass-based diesel requirement, and they are also the predominant fuels used to satisfy the non-cellulosic portion of the advanced biofuel standard. Biodiesel and renewable diesel can be produced from any number of feedstocks including waste oils, non-food grade corn oil, and virgin vegetable oils (primarily soy and canola oil, but also other vegetable oils). The relevant environmental impacts of producing biodiesel or renewable diesel from the same feedstocks are expected to be the same. Biodiesel and renewable diesel from some of these feedstocks, such as waste oils and non-food grade corn oil, can be economical even absent the RFS program.^{19,20}

However, biodiesel and renewable diesel produced from virgin vegetable oil is significantly more expensive to produce than petroleum diesel fuel.²¹ Further, biodiesel and renewable diesel from virgin oils do not have properties that would likely result in their continued use in the U.S. or foreign markets in appreciable quantities in the absence of the RFS program or other incentives (such as the biodiesel tax credit, the California low-carbon fuel standard, or state level mandates and incentives). Therefore, in contrast to corn starch ethanol,

¹⁹ "Modeling a No-RFS Case," ICF Incorporated; Work Assignment 0,1-11, EPA contract EP-C-16-020; July 17, 2018.

²⁰ Use of such waste oils to produce biofuel has no effect on species or critical habitat, because it does not require any crop inputs. Use of non-food grade corn oil is not expected to have an impact on species or critical habitat as the oil portion of the corn kernel is not significant enough, either by mass or value, to affect corn planting (a corn kernel generally contains 3-5% oil). The remainder of the corn kernel is used in other industries, primarily for the production of animal feed and ethanol.

²¹ According to the December 6, 2019 National Weekly Ag Energy Round-Up biodiesel prices ranged from \$2.74 to \$3.16 per gallon. The wholesale price for petroleum diesel according to the December 12, 2019 Today in Energy report ranged from \$1.83 to \$1.93 per gallons.

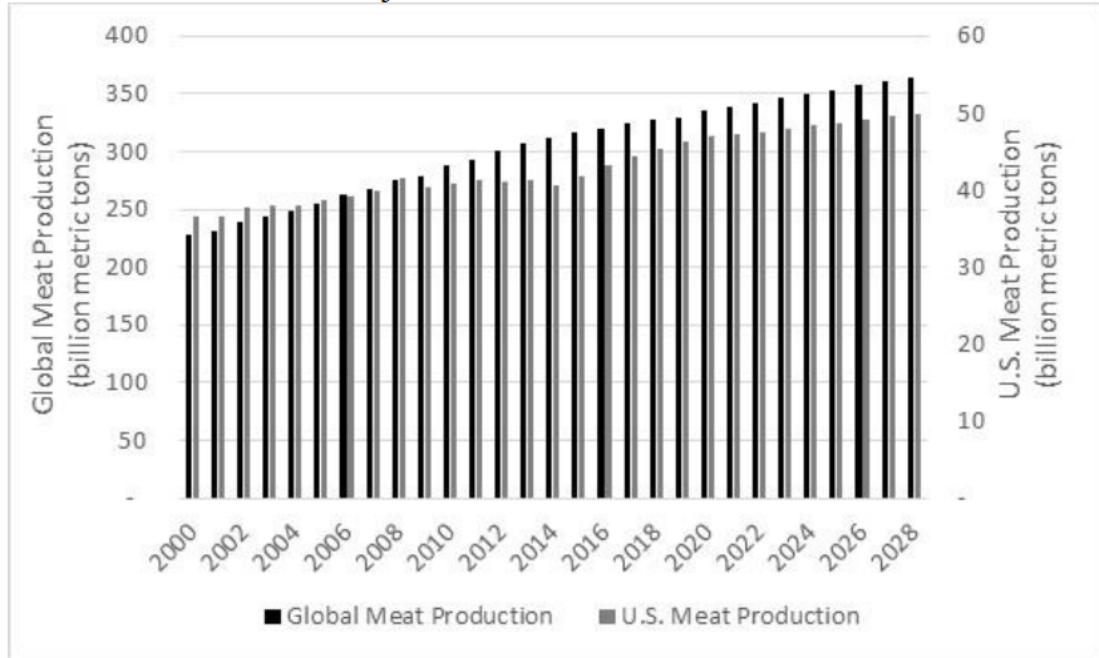
the volume of biodiesel and renewable diesel expected to be used in 2020 is higher than the volume of these fuels that would be expected to be used in the absence of the 2020 annual rule.

While the 2020 RFS standards are likely to drive production and use of biodiesel and renewable diesel in 2020, they will not cause higher production of oilseed crops than would be produced in the absence of the 2020 RFS standards. Oilseed crops, such as soybeans and canola, are primarily grown to provide high protein animal feed (i.e., soy meal and canola meal) for both U.S. and worldwide markets.²² The market demand for high protein animal feed especially has been increasing rapidly over the last decade as meat production has increased in both domestic and foreign markets and is expected to continue to increase in future years as global demand for animal meat increases (see Figure 2 below).²³ While lower demand for biodiesel would be expected to reduce prices for vegetable oils such as soy and canola oil, such lower prices would not alter the market demand for high protein animal feed that is the driver of oilseed crop plantings. That is, in the absence of demand for vegetable oils created by the RFS standards in 2020, virgin vegetable oil prices would likely fall. In response, prices for the primary oilseed products such as soy meal would be expected to increase to offset the lost income from vegetable oils and provide the market signal for continued production of oilseeds. We have observed this market dynamic in previous years. For example, despite falling prices for soybean oil since 2013, soybean production in the U.S. increased through 2018 (see Figure 3 below). We also note that despite an increase in the advanced biofuel volume from 2018 to 2020 (which would generally be expected to result in increased demand for vegetable oil), U.S. production of soybeans is projected to be significantly lower in 2019 and 2020 than previous years due to factors unrelated to the RFS program, such as low commodity prices, high soybean stocks, and tariffs on soybeans exported to other countries.

²² LMC International, *The Growing U.S. Soybean Oil Surplus*, Paper for: National Biodiesel Board, Jefferson City, Missouri, August 2018.

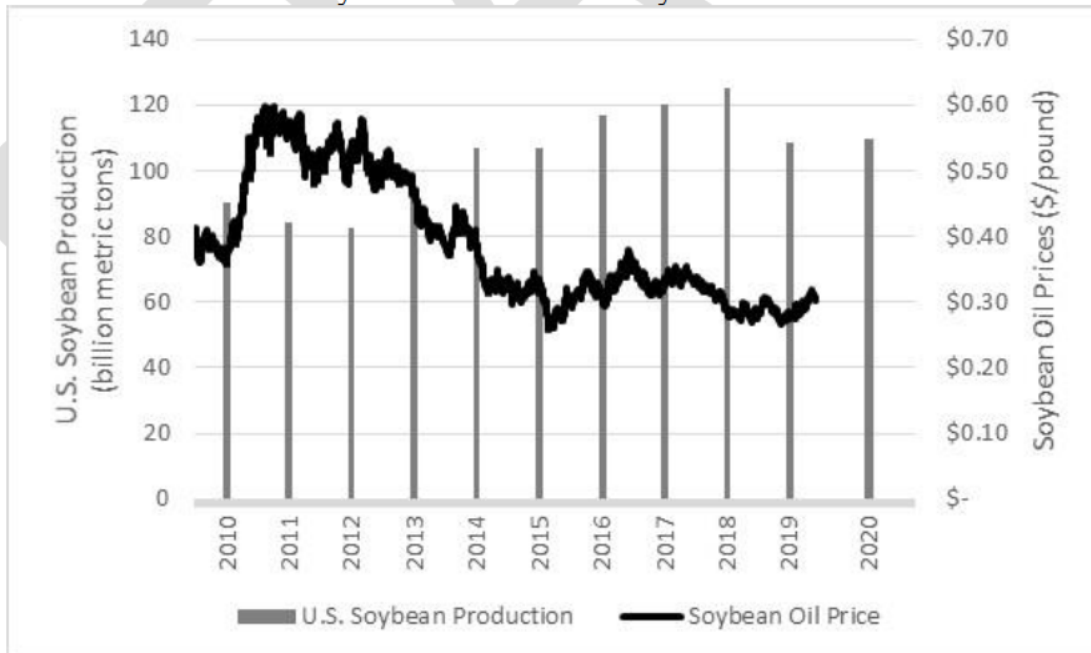
²³ *Ibid.*

Figure 2
Historical and Projected Domestic and Global Meat Production



Data from OECD-FAO Agricultural Outlook

Figure 3
U.S. Soybean Production and Soybean Oil Prices



Data from OECD-FAO Agricultural Outlook and Macrotrends net

Another significant driver of oilseed planting is crop rotation. For example, soybeans are the primary crop grown in rotation with corn, and crop rotation practices significantly impact soybean plantings in any given year. To the degree that plantings of soybeans and other oilseed crops are driven by crop rotation practices, these plantings likely would not be affected by demand for vegetable oils to produce biodiesel.

Not only are oilseed plantings generally driven by demand for high protein animal feed and crop rotation practices, but the particular circumstances related to oilseed supply and demand in 2020 further indicate that increased demand for vegetable oils for biodiesel and renewable diesel production is even less likely than in other years. There is currently an abundance of soybeans in the market, largely due to Chinese tariffs on soybeans produced in the U.S. and decreased trade of oilseeds, further suppressing additional soybean plantings. A large harvest in the 2018/2019 agricultural marketing year (which runs from October 1, 2018 through September 1, 2019 and includes the fall 2018 oilseed harvest) combined with significantly lower trade of oilseed resulted ending stocks of oilseeds that were nearly twice as large as the ending stocks in 2017/2018 and nearly three times larger than ending stocks in 2016/2017.²⁴ This resulted in lower soybean plantings in 2019 and similarly low expected soybean planting in 2020.²⁵ These significant stocks of oilseeds, the observed decreased soybean production in 2019, and the projected low U.S. soybean production in 2020, create a special set of market circumstances. Under this set of market circumstances, any increase in the demand for vegetable oil, caused by increased biodiesel and renewable diesel production in response to the 2020 RFS standards, would not cause an increase in the production of oilseeds.

In addition, while oilseed stocks are expected to remain high in 2019/2020 relative to historic levels, there is no increase in the non-cellulosic advanced biofuel volume for 2020 relative to 2019. As a result, while the RFS program itself may be encouraging the ongoing use of biodiesel and renewable diesel (and thus vegetable oils such as soybean oil and canola oil), the 2020 standards do not cause additional feedstock cultivation beyond what the market would supply in their absence.²⁶

²⁴ *World Agricultural Supply and Demand Estimates*, United States Department of Agriculture, Office of the Chief Economist. October 10, 2019 and *World Agricultural Supply and Demand Estimates*, United States Department of Agriculture, Office of the Chief Economist. October 11, 2018.

²⁵ See expected oilseed production for 2019/2020 in the October 2019 WASDE report and projected soybean production in the July 2019 OECD-FAO Agricultural Outlook (shown in Figure 3).

²⁶ Our finding, in section IV of the preamble to the final rule, that the reasonably attainable volume of advanced biofuels is lower than the required volume is not inconsistent with this no-effects finding for three reasons. First, the reasonably attainable analysis considers the effect of a given volume on diversions of advanced biofuels and feedstocks from existing uses. Unlike the analysis in this memorandum, it does not specifically assess the impacts of that volume on land use, listed species, or critical habitat. Second, even assuming that, in the abstract, diversions increase the likelihood of land-use changes that harm ESA species (a highly speculative proposition), we do not believe the potential diversions caused by the 2020 advanced biofuel volume would do so. The gap between the reasonably attainable volume and the required volume is a small fraction of the volume requirement (~0.09 billion gallons of advanced biodiesel and renewable diesel), which could be produced with ~2.5% of the projected 2019/2020 domestic vegetable oil production. Given the other market circumstances, particularly the high stock of oilseeds, we do not believe this will cause increased oilseed cultivation. Third, other economic factors could allow the market to meet the advanced biofuels standard without any diversion, including higher than expected oilseed

In summary, we conclude that with respect to biodiesel, the 2020 RFS standards do not affect listed species or their critical habitats because production of oilseed crops, such as soybeans and canola, are driven by demand for high protein animal feed and crop rotation, rather than demand for vegetable oils as biodiesel and renewable diesel feedstocks. We note that the position that the RFS volumes do not drive planting of oilseed crops (such as soybeans and canola) in the U.S. is supported by several commenters, including the American Soybean Association,²⁷ the Nebraska Soybean Association,²⁸ the International Council on Clean Transport,²⁹ Growth Energy³⁰ and the Union of Concerned Scientists.³¹ This is particularly true for 2020 given that the unusually large stocks of oilseeds in the U.S., along with the continuing Chinese tariffs on soybean produced in the U.S. and low prices for soybeans and soybean oil, have resulted in significantly lower projections for domestic soybean production in 2019 and 2020.³² Finally, as discussed above with respect to corn ethanol, even if the 2020 RFS standards did impact oilseed production in 2020, any specific impacts on listed species or critical habitat from oilseed cultivation would still not be caused by the 2020 RFS standards.

3. Cellulosic Biofuel

As with biodiesel and renewable diesel, we do not expect that cellulosic biofuel would be used in the transportation fuel market in appreciable quantities absent the RFS program or other incentives. The 2020 RFS standards, therefore, are likely to result in the increased production and use of cellulosic biofuel in 2020. However, we do not expect that these increases will cause any effects on listed species or critical habitats.³³ The vast majority of the cellulosic biofuel volume projected to be supplied in 2020 is CNG/LNG derived from landfill biogas, production which is not known to have any impacts on listed species or critical habitat. Such production does not require any crop or other plant input. The remainder of the cellulosic biofuel volume is expected to be produced from crop residue (such as corn kernel fiber) and woody residues,³⁴ which are not expected to have any impact on crop cultivation decisions or the habitat of listed species. As with corn and oilseeds, even if demand for agricultural residues were to affect crop production, any specific impacts on listed species or critical habitat from cellulosic biofuel

production, increased oilseed crush (according to the October 2019 WASDE report, only 58% of oil contained in harvested oilseeds is expected to be extracted in 2020, but the market could choose to extract a higher percentage), increased collection of waste oils, or lower than expected consumption of vegetable oils in the food or industrial markets.

²⁷ EPA-HQ-OAR-2019-0136-0177

²⁸ EPA-HQ-OAR-2019-0136-0117

²⁹ EPA-HQ-OAR-2018-0167-0531.

³⁰ EPA-HQ-OAR-2019-0136-0726.

³¹ EPA-HQ-OAR-2018-0167-0535.

³² See OECD-FAO Agricultural Outlook (July 2019) projections, shown in Figure 3.

³³ As noted in the 2011 *Biofuels and Environment: First Triennial Report to Congress* (EPA/600/R-10/183F) and reaffirmed in the 2018 *Biofuels and Environment: Second Triennial Report to Congress* (EPA/600/R-18/195), “EISA goals for biofuels production can be achieved with minimal environmental impacts if existing conservation and best management practices are widely employed, concurrent with advances in technologies that facilitate the use of second generation feedstocks.” Pages viii and x in the June 2018 report. Cellulosic biofuels are generally produced from feedstocks that are considered second generation feedstocks.

³⁴ Qualifying cellulosic biofuels can be produced from slash, pre-commercial thinnings, and tree residue. These terms are defined in 40 CFR 80.1401.

production or cultivation would still not be caused by the 2020 RFS standards. Therefore, the 2020 cellulosic biofuel requirement does not affect listed species or critical habitat.

C. Second Triennial Report to Congress and Other Studies

In June 2018, EPA released *Biofuels and the Environment: Second Triennial Report to Congress*, a review of the environmental impacts of biofuels.³⁵ This report did not specifically address the impacts of the 2020 RFS standards. In addition, while the report did discuss literature that generally relates biofuels to crop cultivation, such statements are of limited relevance to the 2020 RFS standards as they did not purport to establish any causal link between the 2020 RFS standards and increased crop cultivation.

Among the specific conclusions of the June 2018 report, EPA found that “[t]he conversion of environmentally-sensitive land to cropland consistent with increased production of current biofuel feedstocks is associated with negative impacts to ecosystem health and biodiversity.” However, the report did not purport to establish a causal connection between the 2020 RFS standards or any other RFS annual rule and land use changes.³⁶ The report also did not specifically evaluate potential effects of biofuels on listed species or critical habitat, or severe environmental harm.

Thus, the report is of limited utility in assessing the environmental impacts of the 2020 RFS standards. To the extent the report is relevant, however, it is consistent with our findings. The June 2018 report concluded that “most environmental effects of biofuel production are associated with the feedstock production stage,” referring to the production of corn, soy, and other crops.³⁷ As we have explained, however, the 2020 RFS standards do not affect crop production.³⁸

We acknowledge that certain statements in the June 2018 report may appear inconsistent with our conclusions that increased production of corn ethanol or oilseed feedstocks for biodiesel would not occur but for the 2020 RFS standards with reasonable certainty. For example, the June 2018 report states that “If feedstock production for biofuels were evenly distributed across the country, then 25% and 2.5% of corn and soybean acreage, respectively, are reasonable first order estimates attributable to biofuels.”³⁹ As explained in the June 2018 report, these estimates and related statements, however, merely relate land use change to biofuels based on the portion of the crop that is used to produce biofuel. For instance, the 2.5% soybean acreage figure is derived by multiplying the percentage of aggregate soybean production used for biofuel

³⁵ U.S. EPA (2018). *Biofuels and the Environment: Second Triennial Report to Congress*. U.S. Environmental Protection Agency, EPA/600/R-18/195. Throughout this memorandum we refer to this document as the “June 2018 report.”

³⁶ Id. at Major Findings & Box 3.

³⁷ Id. at 53 & Box 3.

³⁸ The *Biofuels and the Environment: Second Triennial Report to Congress* also described environmental effects associated with biofuel production unrelated to the feedstock production stage, such as emissions from biofuel production facilities, but noted that these impacts are far smaller in magnitude. Such impacts do not but-for cause any impact on listed species or critical habitat with reasonable certainty, and in the case of corn ethanol would be expected to occur even in the absence of the 2020 RFS standards.

³⁹ Id. at 61 & 62.

production (12%) by the percentage of the physical soybean used for biofuel production (20% by weight). The analysis did not consider the complex regulatory and market factors that are relevant to such relationships.⁴⁰ Furthermore, the 2.5% estimate does not consider the degree to which increased soybean production is being driven by demand for high protein animal feed (which is approximately 80% of the soybean by weight, and the primary product of soybean cultivation) or other economic factors and would have happened regardless of increased demand for biodiesel and renewable diesel. As further explained in the June 2018 report, this kind of proportional analysis is not accurate and leads to incorrect attribution of land use change and biofuels. Currently, there is no scientific consensus about how to accurately and consistently attribute land use change in the context of biofuels.⁴¹

The June 2018 report contained references to several published papers purporting to have established a causal link between the RFS program and the conversion of land to cropland used to provide feedstocks for biofuel production.⁴² To estimate the impact of the RFS program on land conversion, these papers first had to determine the increase in biofuel production attributable to the RFS program since, as discussed above, the mechanism by which the RFS program could cause land conversion is by increasing demand for biofuel feedstocks, and thus increasing the market price for these feedstocks. These papers generally relied on work by Carter and colleagues to establish the volume of biofuel production attributable to the RFS program.⁴³ After reviewing Carter's paper, EPA has determined that Carter's estimates of biofuel production attributable to the RFS program are unsupported assumptions.

Carter makes the assumption that the applicable standards under the RFS1 program (2006 - 2009) were not binding, and that it was only the incremental standards under the RFS2 program (2010 and later years) that drove biofuel use. However, Carter merely assumes that correlations between RFS volumes, ethanol production, and land use changes, indicate that increases in ethanol production and land use changes were caused by the RFS program. The paper does so without considering the economic factors that played a role in the demand for ethanol during this time frame apart from any RFS requirements, such as the octane value of ethanol, crude oil prices and corn prices. Nor did Carter assess the impacts of other federal and state tax credits, mandates and incentives, and export markets. Carter also associates the dramatic increase in ethanol production capacity with an anticipation of new demand from Congressional bills and appear to conflate production capacity with actual demand for ethanol.⁴⁴

Since Lark and others relied on Carter's work to establish the attribution of biofuel production to the RFS program, their conclusions as to the attribution of land use change to the RFS program suffer from the same fundamental flaws. That is, they claim that the RFS program

⁴⁰ The report explicitly disclaims such conclusions by noting that "we cannot quantify these percentages with confidence at this time based solely on that information without new analyses." *Id.* at 54.

⁴¹ *Id.* x & Box 3.

⁴² See, e.g., "Impacts of the Renewable Fuel Standard on America's Land and Water Resources," Lark, et al. (Feb 15, 2019), available in the docket.

⁴³ See, e.g., "Commodity storage and the market effects of biofuel policies," Carter, Rausser, Smith (2017).

⁴⁴ Carter's paper only discusses the impacts of the RFS and ethanol production on land use change. Other papers have used similar methodology to examine the impact of biofuels on other crops such as soybeans and wheat. See, e.g., "Effects of the Renewable Fuel Standard on Corn, Soybean, and Wheat Prices," Smith, available in the docket for this action. These papers suffer from the same shortcomings as Carter's work, generally assuming that observed correlations demonstrate a causation without consideration of other factors.

caused land use changes based solely on correlations between the RFS volumes, ethanol production, and land use change, without analyzing the numerous other economic factors that affect ethanol and feedstock production as EPA has done in this memorandum for the 2020 standards.⁴⁵ To our knowledge, other researchers also either assess only the connection between biofuels and land-use changes or simply reference Carter, without independently analyzing the degree to which land use change is attributable to the RFS program (rather than biofuel production more generally).

It is also important to recognize that the June 2018 report was primarily a retrospective review of the impact of biofuel production on the environment, and did not specifically consider the 2020 RFS standard, nor factors unique to 2020 that will likely have a significant influence on the ultimate environmental impacts of these volumes in the future. Lark's and Carter's work suffers from this problem as well. For example, as discussed above, abnormally large stocks of oilseeds in the U.S. along with the continuing Chinese tariffs on soybean produced in the U.S., low prices for soybeans and soybean oil, and significantly lower projections for domestic soybean production in 2019 and 2020 are examples of the types of factors not considered in the June 2018 report.

D. Conclusion

In conclusion, for the reasons discussed in this memorandum, EPA has determined that the 2020 RFS annual rule will have no effect on listed species or their critical habitat.

⁴⁵ We do not dispute that Lark's work does indicate a likely connection between biofuel production generally and land conversion. In this memorandum EPA is only considering the effects of the 2020 RFS standards on listed species and their critical habitats, rather than the effects of biofuel production more generally.

From: Cathy Tortorici - NOAA Federa
Subject: Re: Materia s to review for our 3/23/21 meeting at 2 pm?
To: Korotney, David
Cc: Burch, Juia; Burkholder, Da as; Craig_Aubrey@fws.gov; Hambright, Rosemary; Karen Myers; Keith Pau ; Li, Ry and (Shengzhi); Machie e, Pau ; Michael s, Lauren; Nancy Brown-Kobi - NOAA Federa ; Ne son, Karen; David Ba dwin - NOAA Federa
Sent: March 22, 2021 4:02 PM (UTC-04:00)

Thanks so much - very helpful!

On Mon, Mar 22, 2021 at 3:25 PM Korotney, David <korotney.david@epa.gov> wrote:

Attached are two things we intend to go over. We may have one or two additional things that we show on our screen.

From: Cathy Tortorici - NOAA Federal <cathy.tortorici@noaa.gov>
Sent: Monday, March 22, 2021 2:23 PM
To: Burch, Julia <Burch.Julia@epa.gov>; Burkholder, Dallas <burkholder.dallas@epa.gov>; Craig_Aubrey@fws.gov; Hambright, Rosemary <Hambright.Rosemary.E@epa.gov>; Karen Myers <karen_myers@fws.gov>; Keith Paul <keith_paul@fws.gov>; Korotney, David <korotney.david@epa.gov>; Li, Ryland (Shengzhi) <Li.Ryland@epa.gov>; Machiele, Paul <machiele.paul@epa.gov>; Michaels, Lauren <Michaels.Lauren@epa.gov>; Nancy Brown-Kobil - NOAA Federal <nancy.brown-kobil@noaa.gov>; Nelson, Karen <nelson.karen@epa.gov>; David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Subject: Materials to review for our 3/23/21 meeting at 2 pm?

Dear all -

I was wondering if there were any materials we should be reviewing in preparation for our meeting this week.

Thanks so much -

Cathy T.

--

Cathy Tortorici

Chief, ESA Interagency Cooperation Division

Office of Protected Resources

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Silver Spring, MD 20910
(w) 301.427.8495

(c) 301.602.2193
cathy.tortorici@noaa.gov

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(c) 301.602.2193
cathy.tortorici@noaa.gov

From: Burch, Julia
Subject: TA on RFS - EPA, FWS, NMFS
To: Burkholder, Dallas; Machiele, Paul; Michaels, Lauren; Korotney, David; Li, Ryland (Shengzhi); Hambright, Rosemary; cathy.tortorici@noaa.gov; Nancy Brown-Kobil - NOAA Federal; Aubrey, Craig; Karen Myers; Nelson, Karen; David Baldwin - NOAA Federal
Cc: Keith Paul; Caldwell, Robert; Bhandar, Gurbakhash S.; Clark, Christopher; Herbolsheimer, Courtney
Sent: March 22, 2021 3:30 PM (UTC-04:00)
Attached: Endangered Species Act No Effect Finding for the 2020 Final Rule.pdf, Corn land use causal diagram.xlsx

Thanks for completing the doodle poll. This time works for the most folks.

Materials to follow.

Thanks!

Microsoft Teams meeting

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Or call in (audio only)

(b) (6)

Find a local number<<https://dialin.teams.microsoft.com/556a4b78-4afd-4fe6-b721-1d903e8cdaa6?id=263094959>> | Reset


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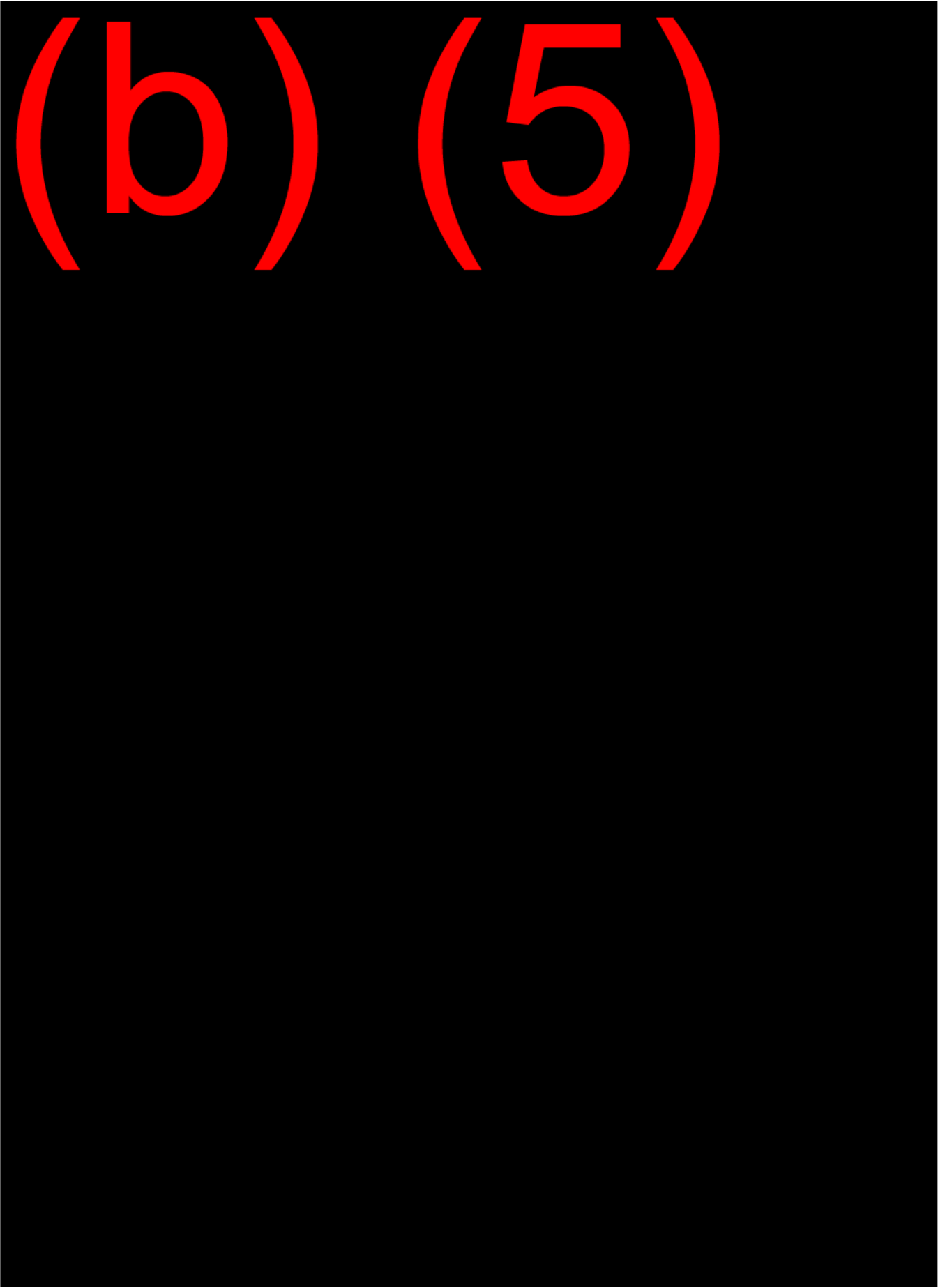
options<https://teams.microsoft.com/meetingOptions/?organizerId=439df38b-fa0a-453b-8c1a-bb5bfcc76647&tenantId=88b378b3-6748-4867-acf9-76aacbeca6a7&threadId=19_meeting_OTdhNzdkMDUtMzQxNy00YTdkLTg5ZTItMTFiNTI4YTJhNGZi@thread.v2&messageId=0&language=en-US>

(b) (5)



(b) (5)

(b) (5)



MEMORANDUM

Subject: Endangered Species Act No Effect Finding for the 2020 Final Rule

To: EPA Air Docket EPA-HQ-OAR-2019-0136

From: EPA staff

Date: December 2019

In this memorandum, EPA determines that the 2020 RFS standards¹ final rule has no effect on threatened and endangered species (collectively “listed species”) or their critical habitats. We make this finding under Section 7(a)(2) of the Endangered Species Act (ESA) and implementing regulations promulgated by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (collectively “the Services”) at 50 CFR Part 402. Today’s finding is similar to the no-effects finding we issued in promulgating the 2019 RFS standards but is based on a new and searching evaluation of the entire record before us.

Section A of this memo explains the governing regulatory framework for consultation in light of the new ESA consultation regulations and the D.C. Circuit’s recent opinion regarding ESA consultation in the 2018 RFS annual rule. Section B articulates EPA’s analysis of the fuels and agricultural markets, including updated data on the production, consumption, and export of biofuels and underlying feedstocks. Section C considers other recent environmental analyses of biofuels, including EPA’s June 2018 *Biofuels and the Environment: Second Triennial Report to Congress* and other studies. We explain why we have found that the 2020 standards rule causes no-effects notwithstanding the general association between biofuels and environmental impacts we and others have previously described.

A. Legal and Regulatory Framework

Pursuant to section 7(a)(2) of the ESA and the Services’ regulations, 50 CFR 402.14(a), federal agencies are required to consult with the Services on actions they authorize, fund, or carry out that may affect listed species or designated critical habitat. Consultation is not required where the action has no effect on such species or habitat.

On August 27, 2019, the Services promulgated new, binding regulations regarding ESA consultation. 84 FR 44976 (Aug. 27, 2019). The regulations define “effects of the action” as “all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur *but for* the proposed action and it is *reasonably certain to occur*” (emphasis added). 50 CFR 402.02 (“Effects of the Action”). In other words, “[t]o be considered an effect of a proposed action, a consequence must be caused by

¹ Throughout this memorandum, we use the term “2020 RFS standards” to refer to the four volume requirements established in the 2020 final rule, the percentage standards associated with these volumes, and the biomass-based diesel required volume for 2021.

the proposed action (i.e., the consequence would not occur but for the proposed action and is reasonably certain to occur).” 50 CFR 402.17(b).

“A conclusion of reasonably certain to occur must be based on clear and substantial information, using the best scientific and commercial data available.” 50 CFR 402.17(a), (b). That is, “there must be a firm basis to support a conclusion that a consequence of an action is reasonably certain to occur. The determination of a consequence to be reasonably certain to occur must be based on solid information and should not be based on speculation or conjecture.” 84 FR 44977/3. The regulations also provide a non-exhaustive list of considerations for determining that a consequence is not caused by the agency action: the consequence is so remote in time or space from the action that it is not reasonably certain to occur, or “only reached through a lengthy causal chain that involves so many steps as to make the consequence not reasonably certain to occur.” 50 CFR 402.17(b)(1)-(3).

The new regulations also removed the prior regulatory terms “direct and indirect effects” and “interdependent or interrelated activity.” However, the Services clarified that the new regulations were not thereby intended to make a substantive change, but only to streamline the regulation, *see, e.g.*, 84 FR 44977/1, and noted that these terms still “can be useful” in analyzing the effects of an action, *id.* at 44988/3.

On September 6, 2019, the D.C. Circuit resolved challenges to the 2018 RFS annual rule in *American Fuel & Petrochemical Manufacturers v. EPA*, 937 F.3d 559 (D.C. Cir. 2019) (*per curiam*). In doing so, the Court found that environmental petitioners had standing to litigate EPA’s alleged failure to consult under the ESA, based on declarations submitted by the petitioners’ members, as well as studies associating biofuels with land-use changes in past years. These studies included EPA’s report *Biofuels and the Environment: Second Triennial Report to Congress*. Many of these studies correlated biofuel production with land-use change patterns prior to 2016. For standing purposes, the Court reasoned that “the 2018 Rule is simply the next iteration of [RFS] standards” and thereby inferred that the rule caused injury to environmental petitioners. *Id.* at 595.

At the time, the Court rejected petitioners’ arguments that “the evidence conclusively establishes that the 2018 Rule ‘may affect’ listed species or critical habitat.” *Id.* at 598. Instead, the Court remanded the rule to EPA and ordered the agency to “develop the record and decide the issue in the first instance on remand.” *Id.* In addition, the Court clarified that EPA’s duty was to specifically assess the impacts of the 2018 Rule based on the record before it, not to engage in an ESA effects analysis of the entire RFS program. *See id.* at 591, 597-98.² Consistent with the Court’s direction regarding the 2018 rule, EPA has, in promulgating the 2020 rule, considered the evidence before us and determined that this rule has no effect on listed species or their critical habitats. Our conclusions are specific to the 2020 RFS standards.³

² EPA is still considering the Court’s remand of the 2018 rule, and is not taking final action on that remand in the 2020 standards final rule.

³ EPA has carefully considered the comments raised during the periods for public comment (including the public hearings) for this rulemaking. We have not identified any comments that argue, with reasonable specificity, that EPA is obligated to consult under the ESA in promulgating the 2020 standards rule. We did receive a comment suggesting that consultation with the Services on the 2020 rule is not required and generally supporting our findings here. See Comment available at EPA-HQ-OAR-2019-0136-0726.

B. No Effect Determination

EPA determines that it need not consult with the Services because the 2020 RFS standards will have no effect on listed species or their critical habitat. That is, there are no effects to listed species or critical habitat that would not occur but-for the 2020 RFS standards and that are reasonably certain to occur. See 50 CFR 402.02 (“Effects of the action”). In reaching this conclusion, we have assessed the 2020 RFS standards independent of past annual rules.⁴

First, the 2020 RFS standards do not directly affect listed species or critical habitat. The 2020 RFS standards require the market to use renewable fuels as transportation fuel, heating oil, or jet fuel in the U.S. in 2020. They do not require, authorize, fund, or carry out the production of any specific biofuel or crop, the use of any land that is critical habitat, or the taking of any listed species or other activity that may affect any listed species. Decisions on what type of feedstock to use for biofuel production, where such feedstocks are grown, the types and volumes of agricultural inputs such as fertilizer or pesticide to use in growing the feedstocks, and what types of renewable fuel will ultimately be produced, are made by third parties, and any on-the-ground activities to implement and carry out those decisions are undertaken by such third parties.⁵ Moreover, some third parties, notably farmers who decide how much and where they plant crops, are not regulated by the RFS program at all. All the above decisions are also influenced by many market factors beyond the RFS standards, some of which we discuss further below.

Second, we have also considered whether, beyond the direct effects, any consequences on listed species or critical habitat are reasonably certain to occur but for the 2020 RFS standards, that is whether any such consequences are “caused” by the 2020 RFS standards.⁶ We perform this analysis for each of the three major types of biofuels expected to be used to satisfy the 2020 RFS standards: ethanol made from corn starch, the primary conventional renewable fuel used under the RFS; advanced biofuels with a focus on biodiesel and renewable diesel made from oilseeds (primarily soy and canola), which are the primary advanced biofuels used under the RFS; and cellulosic biofuels. For each category of biofuel, we conclude that the 2020 RFS standards do not cause any effects to listed species or critical habitats.

⁴ We would reach the same no-effects conclusion were we to assess the relatively small volume increase relative to the 2019 final rule volumes. We note that in relation to the 2019 final rule, the 2020 rule increases only the cellulosic biofuel volume, with corresponding increases to the advanced and total volumes. There is no increase in the implied non-cellulosic advanced or conventional volumes. The entirety of the cellulosic biofuel volume increase is due to CNG/LNG derived from landfill biogas. As we explain in section B.3, the production of this biofuel is not expected to have any impacts on listed species or critical habitats. (The BBD volume also increases from 2019 to 2020, albeit not from 2020 to 2021. But in any event, the BBD volume for these years is expected to be non-binding, with BBD volumes instead being driven by the advanced biofuel standard as explained in section VII of the 2020 final rule, and section VI of the 2019 final rule, 83 FR 63704, 63734-63739. Therefore, in considering the advanced biofuel volume we have also considered the BBD volume, as we do not expect that renewable fuel production in 2020 and 2021 would be any different in the absence of the BBD volume requirement.)

⁵ Corn and oilseed plantings, for fuel or food, occur on private land and are not authorized, funded, or carried out by the 2020 RFS standards. While these activities are not caused by or attributable to the 2020 RFS standards and are not reasonably certain to occur, EPA notes that Section 9 of the ESA – which prohibits the take of individuals of most listed species – and the permitting scheme established under Section 10 of the ESA may provide protection for listed species as future non-federal activities become reasonably certain.

⁶ Throughout the remainder of this section B, we use the term “cause” as a term of art to refer to the concept of but-for cause with reasonable certainty, as defined in the Services’ regulations at 50 CFR 402.02 (“Effects of the action”). In sections A and C, we use “cause” with its ordinary meaning.

Generally, we find that for each of the three major types of biofuels, the 2020 standards would not be the but-for cause of any impacts on listed species or critical habitat. In any event, even if the 2020 standards were the but-for cause of any impacts, those impacts would not be reasonably certain to occur. Given the highly attenuated causal chain between the 2020 standards and potential impacts on listed species and critical habitat, any such impacts would be “only reached through a lengthy causal chain that involves so many steps as to make the consequence not reasonably certain to occur.” 50 CFR 402.17(b)(3). In addition, we are not aware of “clear and substantial information, using the best scientific and commercial data available” that would support a conclusion that such effects are reasonably certain to occur. 50 CFR 402.17(a). To the contrary, our analysis of the data before us indicates that any such impacts would not occur but-for the 2020 standards, and certainly not with reasonably certainty.

For corn ethanol, we find that the 2020 RFS standards do not cause any increase in corn ethanol production and therefore do not cause any increase in corn cultivation in the United States. We believe that this reason independently justifies our “no effect” finding. However, even if corn ethanol production and corn cultivation were to be affected to some degree by the 2020 RFS standards, any specific effects on listed species or critical habitat from those activities would still not be caused by the 2020 RFS standards.

For biodiesel and renewable diesel produced from oilseeds, available information (such as the current price for D4 and D5 RINs) indicates that the 2020 RFS standards will result in their higher use and production than in the absence of the rule. Nonetheless, we find that the 2020 RFS standards do not cause any effects on listed species or critical habitats. There are three reasons for this: (1) biodiesel and renewable diesel production to satisfy the 2020 RFS standards is not expected to cause increased cultivation of oilseeds because oilseed cultivation is primarily driven by other factors; (2) even were biodiesel and renewable diesel production to generally impact oilseed cultivation, the 2020 RFS standards do not impact oilseed cultivation due to unique regulatory and market circumstances in 2020; and (3) as with corn ethanol, even if there were any changes in oilseed cultivation, any specific impacts on listed species or critical habitat from oilseed cultivation would still not be caused by the 2020 RFS.

For cellulosic biofuel, available information (such as the current price for D3 RINs) indicates that the 2020 RFS standards will likely increase the use and production of cellulosic biofuels. However, we find that the 2020 RFS standards do not cause effects on listed species or critical habitats, because: (1) cellulosic biofuel is almost entirely sourced by recovering biogas from landfills, and that is not expected to affect listed species or their critical habitat; (2) a very small portion of cellulosic biofuel is produced from crop or woody residues, which are not expected to have any impact on crop cultivation decisions or the habitat of listed species at the quantity used in 2020; and (3) as with the other biofuels, even were there to be environmental impacts associated with these processes, any specific impacts on listed species or critical habitat from cellulosic biofuel production or cultivation would still not be caused by the 2020 RFS standards.⁷

⁷ We have also considered other potential environmental impacts of the 2020 standards. See, e.g., Response to Comments section 2.1.3 (severe environmental harm), 8.2 (environmental impacts generally). None of them indicate that this rule may affect listed species or critical habitats.

1. Conventional Renewable Fuel (Corn Starch Ethanol)

The 2020 RFS standards require the use of specified volumes of four categories of renewable fuel. While many stakeholders often refer to a 15-billion-gallon requirement for corn ethanol, neither EISA nor EPA's annual rules contain such a requirement. Nor is there a specific requirement for conventional (non-advanced) renewable fuel, the only category for which ethanol produced from corn starch can qualify, although EISA implies a conventional renewable fuel volume in the difference between the total renewable fuel volume and the advanced biofuel volume. In fact, multiple types of renewable fuels produced from a variety of feedstocks can be used to satisfy the total renewable fuel volume requirements, including fuels such as ethanol, biodiesel, renewable diesel, butanol, compressed natural gas, and liquefied natural gas. However, historically, ethanol produced from corn starch has been the predominant fuel used to satisfy the implied requirement for conventional renewable fuel, and we anticipate that it will continue to be the predominant fuel used to satisfy this implied volume requirement in 2020.

Since 2017, the implied conventional renewable fuel requirement has been 15 billion gallons. While this volume is higher than the volume of ethanol used in the U.S. as transportation fuel in recent years, we do not expect that the 2020 RFS standards will cause greater production of ethanol from corn starch than would otherwise occur. This is because demand for corn ethanol, both in the U.S. and globally, is strong for other economic reasons.⁸ It is this demand in the U.S. and abroad, which exceeds the implied volume for conventional renewable fuel in 2020, that is in turn driving corn ethanol production in the U.S. and thus driving the production of corn to produce ethanol in the U.S. As discussed in greater detail below, the two primary drivers of this demand are the use of ethanol in E10 blends as an octane booster domestically and demand for ethanol from foreign countries. We thus do not expect that this demand would change appreciably in the absence of 2020 RFS standards, as discussed below.

Currently, almost all gasoline in the U.S. contains 10% ethanol, and this is unlikely to change in the near future even in the absence of the RFS program. The gasoline refining and distribution system, driven by the favorable blending economics of ethanol over the last decade, has invested heavily to transform itself to rely on the use of 10% ethanol. The blending of ethanol into gasoline is currently a profitable practice for refiners and blenders due to the relatively low cost of ethanol and the significant value of ethanol's high octane rating.^{9, 10} To

⁸ See World Fuel Ethanol Consumption by Year. Indexmundi.

⁹ On December 12, 2019, EIA reported (www.eia.gov/todayinenergy/prices.php) wholesale spot gasoline (RBOB) prices in different markets ranging from \$1.53-1.63 per gallon in comparison to a Chicago Board of Trade (CBOT) spot price of ethanol at \$1.32 per gallon. Thus, even without the considerable added octane blending value of ethanol, current market prices favor blending ethanol into gasoline to create E10 (where ethanol's lower energy content is not transparent to consumers). Because ethanol is less expensive than gasoline, blending up to ten percent ethanol into gasoline reduces the overall cost for blended gasoline.

¹⁰ See EIA AEO 2019, Table A12: Petroleum and other Liquid Prices, Reference Case, projecting increases in crude oil prices from \$74/bbl in 2018 to \$82/bbl in 2025, and \$108/bbl in 2050, and USDA Long-Term Projections, October 2019, Table 5: U.S. Corn long-term projections, projecting slight increases from \$3.61/bushel in 2018/2019 up to \$3.80/bushel in 2019/2020 and \$3.55/bushel in 2025/2026. These projections indicate that the market dynamics are unlikely to change. That is, given that corn prices are expected to remain relatively stable over these time periods despite significant increases in crude oil prices, the favorable economics of blending ethanol in E10 are expected to continue.

better understand the blending economics of renewable fuels, EPA commissioned a study to assess biofuel use in future years in the absence of RFS requirements.¹¹ This study concluded that even in the absence of the RFS standards refiners and blenders were likely to continue to blend ethanol into gasoline at a 10% rate due to the favorable economics of ethanol as a gasoline blending component and octane enhancer. These findings are similar to those we made in response to petitions for a waiver of the 2012 and 2013 RFS standards on the basis of severe economic harm associated with a drought, where we concluded that the RFS standards in the latter part of 2012 and early part of 2013 would not be expected to drive ethanol use.¹²

Over the last dozen years or so, the entire gasoline production and distribution system has also invested billions of dollars to adjust itself to the use of E10 ethanol blends. Refiners have modified their process units and operations to produce sub-octane gasoline blendstocks that cannot be sold as gasoline without the subsequent addition of ethanol.¹³ Pipelines likewise have shifted their physical assets and operations to distribute these blendstocks instead of finished gasoline. Terminals across the country have been modified to receive and store shipments of ethanol and blend it into these blendstocks. Rail lines and trucking fleets have been expanded to accommodate the shipment of ethanol, which is approximately 10% of our nation's gasoline supply, through means other than pipelines. To reverse course and go back to refining and distributing ethanol free finished gasoline would require much more than a reduction in the 2020 RFS standards; it would require a market-wide decision that would then take years and likely billions of dollars to implement. This would require a significant economic driver over a sustained period. Thus, even if the blending of ethanol in E10 blends is unexpectedly unfavorable economically in 2020 (and there is no reason to believe that this would be the case) it would likely still continue in 2020 due to these market factors. Domestic demand for ethanol in E10 blends is projected to be approximately 14.3 billion gallons in 2020. The vast majority of the ethanol projected to be used in the U.S. in 2020 is expected to be used as E10. Thus, hypothetically, were EPA to waive all of the RFS requirements for 2020, we would expect domestic use of ethanol in the U.S. to only decrease slightly as a result of decreased sales of higher level ethanol blends such as E15 or E85, which do not receive the same octane benefit as ethanol blended as E10.^{14 15}

While the 2020 RFS standards may have some minor impacts on corn ethanol use, primarily for blends greater than E10, we find that they will not cause any impact on corn ethanol production. Consumption of ethanol in the U.S. has remained relatively steady since

¹¹ "Modeling a No-RFS Case," ICF Incorporated; Work Assignment 0,1-11, EPA contract EP-C-16-020; July 17, 2018. We also received two studies in comments that was consistent with the conclusion that E10 would continue to be used in the U.S. even in the absence of the RFS program ("An Assessment of the Renewable Fuel Standard Using EVA-NEMS," Energy Ventures Analysis, prepared for The Fueling American Jobs Coalition, July 17, 2019, and; "The RFS and Ethanol Production: Lack of Proven Impacts to Land and Water," prepared by Ramboll for Growth Energy, August 18, 2019. See Comment available at EPA-HQ-OAR-2019-0136-0726.

¹² See 77 FR 70752.

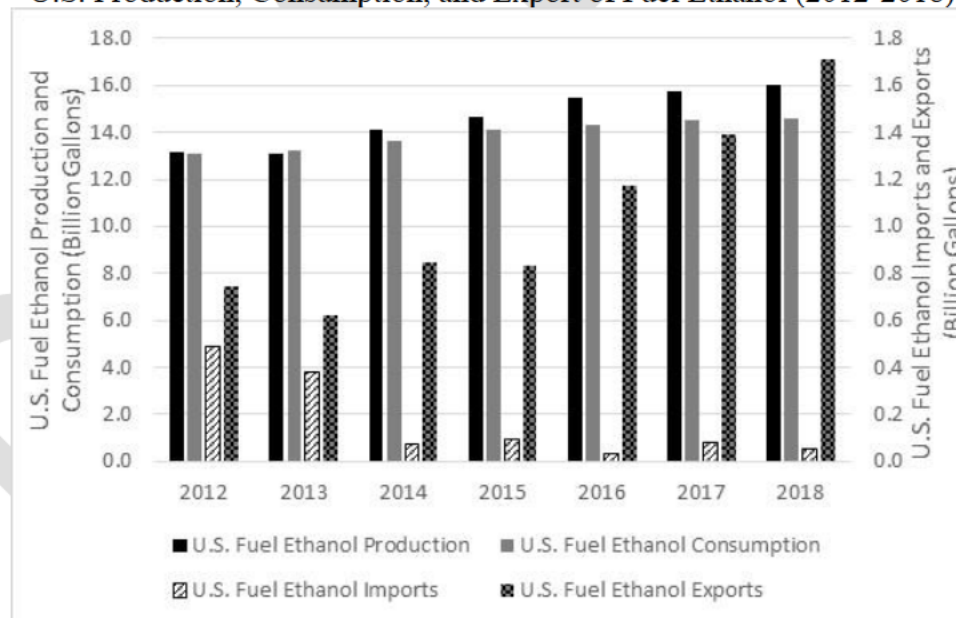
¹³ See comments from PBF Energy, EPA-HQ-OAR-2017-0091-4702, CVR Energy, EPA-HQ-OAR-2017-0091-4888, REG, EPA-HQ-OAR-2017-0091-4500.

¹⁴ See "Updated market impacts of biofuels in 2020," memorandum from David Korotney to docket EPA-HQ-OAR-2018-0167.

¹⁵ Even then, some E15 and E85 use would continue due to ongoing Federal, State, and Local requirements and incentives, other than RFS standard, for the use of such fuels and taking advantage of the infrastructure already in place.

reaching the E10 blendwall in 2013, as the production of corn starch ethanol in the U.S. has continued to increase well beyond the volumes required by the RFS standards. Ethanol production in the U.S. exceeded the implied maximum statutory volume (15 billion gallons) in 2016 and has continued to increase since that time (see Figure 1 below). In 2018, ethanol production in the U.S. reached approximately 16.0 billion gallons. This increasing production is not being driven by the RFS requirements, as the production levels far exceed the volumes used in the United States and available for RFS compliance, and instead appear to be driven by favorable export markets for corn ethanol. As depicted in Figure 1, below, U.S. ethanol producers have exported increasing volumes of corn ethanol to overseas markets in recent years. We currently expect that the production of ethanol for export markets will continue in 2020, as we are not currently aware of any market dynamics that would result in the economics of producing ethanol for export markets being unfavorable in 2020. This is especially the case for ethanol plants that have already been constructed and must continue to produce ethanol to provide a return on this capital investment.¹⁶

Figure 1
U.S. Production, Consumption, and Export of Fuel Ethanol (2012-2018)



Data from EIA and EMTS

Since the primary drivers for ethanol production in 2020 are domestic demand for ethanol in E10 blends for non-RFS economic reasons and foreign demand for ethanol, we have concluded that the 2020 RFS standards will not cause any impact on corn ethanol production. Therefore, the 2020 RFS standards will not cause any impact on corn production in 2020.

¹⁶ According to an economic model of corn starch ethanol production created by Iowa State University, the depreciation and interest payments an average corn ethanol plant with a nameplate capacity would be approximately \$0.17 per gallon of ethanol produced, or \$17.3 million per year. The economic model is available online at: <https://www.extension.iastate.edu/agdm/energy/xls/d1-10ethanolprofitability.xlsx>

Furthermore, even if the 2020 RFS standards were to drive some corn starch ethanol production in 2020, it is still not reasonably certain whether domestic corn plantings would be any different since corn supply could simply shift to other markets. Corn plantings are a function of a large number of worldwide agricultural sector market factors, including markets in food and feed.¹⁷ Unless domestic corn growers are the marginal supply of corn on a global scale (which has not been the case historically),¹⁸ decreased demand for corn for ethanol production would not result in decreased corn production in the U.S. with reasonable certainty, but could instead result in decreased production in foreign markets.

Further, even if corn plantings were driven by the 2020 RFS standards, there is no evidence that a particular parcel of land would be planted with corn but-for the 2020 RFS, much less that any such effects are reasonably certain to occur. First, as we explained above, the 2020 RFS standards do not directly require, authorize, fund, or carry out the planting of corn. Decisions on what type of feedstock to use for biofuel production, where such feedstocks are grown, the types and volumes of agricultural inputs such as fertilizer or pesticide to use in growing the feedstocks, and what types of renewable fuel will ultimately be produced, are made by third parties. In addition, the farmers directly responsible for cultivating corn are not regulated by the RFS program at all.

Second, while satellite imagery can provide information on the types of crops grown on a given parcel of land in a given year, there currently exists no nationwide system for tracking how crops from a particular parcel of land are used. As a result, based on the record before us, there is no way to determine if the crops grown on a particular parcel were used for biofuel production versus some other use such as food, animal feed, or export.

Third, even were it possible to attribute a particular acre of corn to biofuel production, it is not possible to attribute such production to a qualifying RFS use in the United States as opposed to exports or another non-qualifying use. As noted above, biorefineries have economic incentives to produce biofuels regardless of the RFS standards. This lack of granularity and tracking of crops for particular uses means that any estimates of localized impacts on the environment from crops grown for biofuel are highly uncertain. Thus, while some work has been done correlating crop use for biofuel production using proximity to a biofuel production facility, those analyses do not evaluate whether that biofuel is used domestically (and thus can be counted towards compliance with the 2020 RFS standards) or exported. Such analyses remain probabilistic and limited in scope, and we do not believe that they are sufficient to be able to identify impacts on particular parcels of land.

Fourth, even if one were to link particular corn kernels grown on a particular parcel of land to ethanol production, and such production in turn to a qualifying RFS use, the end use of crops produced on the same parcels of land can and does vary from year to year. Thus, it is speculative whether any connection established for prior years would remain in 2020.

¹⁷ Laca, Anna-Lisa. *Factors Influencing Global Grain Production*. Agweb.com. November 28, 2017.

¹⁸ Meade, B., Puricelli, E., McBride, W., Valdes, C., Hoffman, L., Foreman, L., & Dohlman, E. *Corn and Soybean Production Costs and Export Competitiveness in Argentina, Brazil, and the United States*. United States Department of Agriculture Economic Research Service. June 2016.

Fifth and finally, even if reducing the 2020 RFS standards were to lead to decreases in corn production, these changes would likely not reverse the impacts of land-use decisions made in prior years (whether those prior decisions were the result of increased biofuel production or not). Once acres have been converted to cropland, they do not quickly revert to the condition of their former state as native grassland, forest, or wetlands. In reality, once the expense of clearing the land has occurred, and investments have been made in equipment and infrastructure for farming that land so that land tends to stay in agricultural use. Therefore, continued cultivation of that converted land is likely to occur even if lower 2020 RFS standards resulted in a decreased demand for feedstocks for biofuel production.

In summary, we conclude that with respect to corn ethanol, the 2020 RFS standards do not cause any effects on listed species or their critical habitats. This is because the 2020 RFS standards do not cause any effects on the production of ethanol in the U.S. and thus production of corn used as an ethanol feedstock. We further note that even if the 2020 RFS standards did impact corn ethanol or corn production in 2020, any specific effects on listed species or critical habitat from those activities would still not be caused by the 2020 RFS standards.

2. Biodiesel and Renewable Diesel

While there are no requirements under the RFS program specific to ethanol, the statute does contain a mandate for biomass-based diesel. Biodiesel and renewable diesel are used to satisfy the biomass-based diesel requirement, and they are also the predominant fuels used to satisfy the non-cellulosic portion of the advanced biofuel standard. Biodiesel and renewable diesel can be produced from any number of feedstocks including waste oils, non-food grade corn oil, and virgin vegetable oils (primarily soy and canola oil, but also other vegetable oils). The relevant environmental impacts of producing biodiesel or renewable diesel from the same feedstocks are expected to be the same. Biodiesel and renewable diesel from some of these feedstocks, such as waste oils and non-food grade corn oil, can be economical even absent the RFS program.^{19,20}

However, biodiesel and renewable diesel produced from virgin vegetable oil is significantly more expensive to produce than petroleum diesel fuel.²¹ Further, biodiesel and renewable diesel from virgin oils do not have properties that would likely result in their continued use in the U.S. or foreign markets in appreciable quantities in the absence of the RFS program or other incentives (such as the biodiesel tax credit, the California low-carbon fuel standard, or state level mandates and incentives). Therefore, in contrast to corn starch ethanol,

¹⁹ "Modeling a No-RFS Case," ICF Incorporated; Work Assignment 0,1-11, EPA contract EP-C-16-020; July 17, 2018.

²⁰ Use of such waste oils to produce biofuel has no effect on species or critical habitat, because it does not require any crop inputs. Use of non-food grade corn oil is not expected to have an impact on species or critical habitat as the oil portion of the corn kernel is not significant enough, either by mass or value, to affect corn planting (a corn kernel generally contains 3-5% oil). The remainder of the corn kernel is used in other industries, primarily for the production of animal feed and ethanol.

²¹ According to the December 6, 2019 National Weekly Ag Energy Round-Up biodiesel prices ranged from \$2.74 to \$3.16 per gallon. The wholesale price for petroleum diesel according to the December 12, 2019 Today in Energy report ranged from \$1.83 to \$1.93 per gallons.

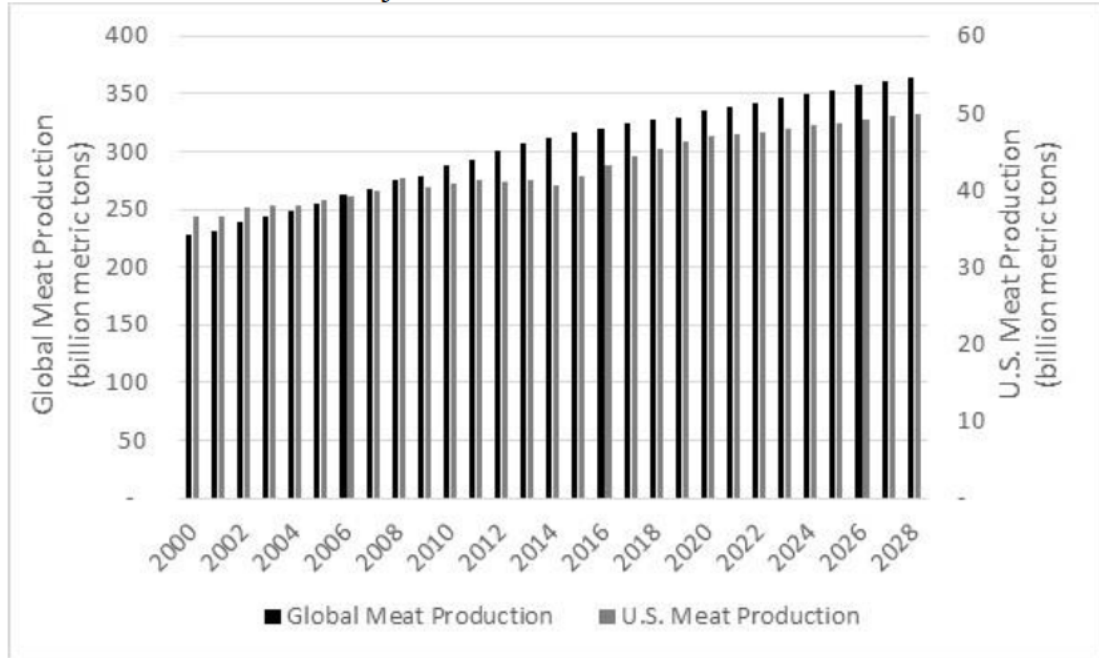
the volume of biodiesel and renewable diesel expected to be used in 2020 is higher than the volume of these fuels that would be expected to be used in the absence of the 2020 annual rule.

While the 2020 RFS standards are likely to drive production and use of biodiesel and renewable diesel in 2020, they will not cause higher production of oilseed crops than would be produced in the absence of the 2020 RFS standards. Oilseed crops, such as soybeans and canola, are primarily grown to provide high protein animal feed (i.e., soy meal and canola meal) for both U.S. and worldwide markets.²² The market demand for high protein animal feed especially has been increasing rapidly over the last decade as meat production has increased in both domestic and foreign markets and is expected to continue to increase in future years as global demand for animal meat increases (see Figure 2 below).²³ While lower demand for biodiesel would be expected to reduce prices for vegetable oils such as soy and canola oil, such lower prices would not alter the market demand for high protein animal feed that is the driver of oilseed crop plantings. That is, in the absence of demand for vegetable oils created by the RFS standards in 2020, virgin vegetable oil prices would likely fall. In response, prices for the primary oilseed products such as soy meal would be expected to increase to offset the lost income from vegetable oils and provide the market signal for continued production of oilseeds. We have observed this market dynamic in previous years. For example, despite falling prices for soybean oil since 2013, soybean production in the U.S. increased through 2018 (see Figure 3 below). We also note that despite an increase in the advanced biofuel volume from 2018 to 2020 (which would generally be expected to result in increased demand for vegetable oil), U.S. production of soybeans is projected to be significantly lower in 2019 and 2020 than previous years due to factors unrelated to the RFS program, such as low commodity prices, high soybean stocks, and tariffs on soybeans exported to other countries.

²² LMC International, *The Growing U.S. Soybean Oil Surplus*, Paper for: National Biodiesel Board, Jefferson City, Missouri, August 2018.

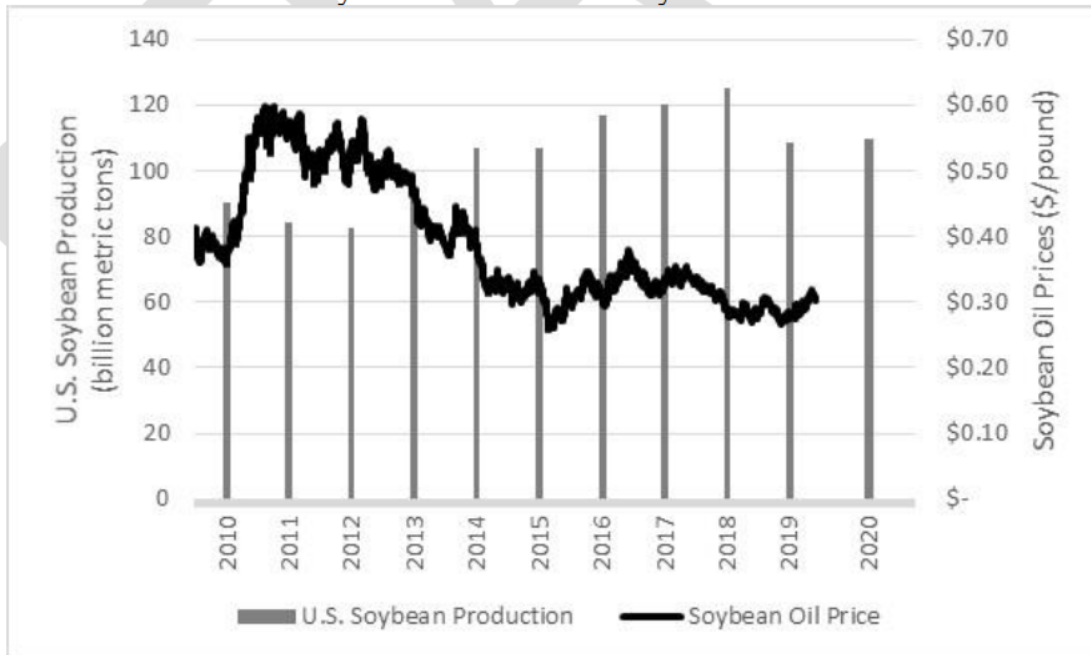
²³ *Ibid.*

Figure 2
Historical and Projected Domestic and Global Meat Production



Data from OECD-FAO Agricultural Outlook

Figure 3
U.S. Soybean Production and Soybean Oil Prices



Data from OECD-FAO Agricultural Outlook and Macrotrends net

Another significant driver of oilseed planting is crop rotation. For example, soybeans are the primary crop grown in rotation with corn, and crop rotation practices significantly impact soybean plantings in any given year. To the degree that plantings of soybeans and other oilseed crops are driven by crop rotation practices, these plantings likely would not be affected by demand for vegetable oils to produce biodiesel.

Not only are oilseed plantings generally driven by demand for high protein animal feed and crop rotation practices, but the particular circumstances related to oilseed supply and demand in 2020 further indicate that increased demand for vegetable oils for biodiesel and renewable diesel production is even less likely than in other years. There is currently an abundance of soybeans in the market, largely due to Chinese tariffs on soybeans produced in the U.S. and decreased trade of oilseeds, further suppressing additional soybean plantings. A large harvest in the 2018/2019 agricultural marketing year (which runs from October 1, 2018 through September 1, 2019 and includes the fall 2018 oilseed harvest) combined with significantly lower trade of oilseed resulted ending stocks of oilseeds that were nearly twice as large as the ending stocks in 2017/2018 and nearly three times larger than ending stocks in 2016/2017.²⁴ This resulted in lower soybean plantings in 2019 and similarly low expected soybean planting in 2020.²⁵ These significant stocks of oilseeds, the observed decreased soybean production in 2019, and the projected low U.S. soybean production in 2020, create a special set of market circumstances. Under this set of market circumstances, any increase in the demand for vegetable oil, caused by increased biodiesel and renewable diesel production in response to the 2020 RFS standards, would not cause an increase in the production of oilseeds.

In addition, while oilseed stocks are expected to remain high in 2019/2020 relative to historic levels, there is no increase in the non-cellulosic advanced biofuel volume for 2020 relative to 2019. As a result, while the RFS program itself may be encouraging the ongoing use of biodiesel and renewable diesel (and thus vegetable oils such as soybean oil and canola oil), the 2020 standards do not cause additional feedstock cultivation beyond what the market would supply in their absence.²⁶

²⁴ *World Agricultural Supply and Demand Estimates*, United States Department of Agriculture, Office of the Chief Economist. October 10, 2019 and *World Agricultural Supply and Demand Estimates*, United States Department of Agriculture, Office of the Chief Economist. October 11, 2018.

²⁵ See expected oilseed production for 2019/2020 in the October 2019 WASDE report and projected soybean production in the July 2019 OECD-FAO Agricultural Outlook (shown in Figure 3).

²⁶ Our finding, in section IV of the preamble to the final rule, that the reasonably attainable volume of advanced biofuels is lower than the required volume is not inconsistent with this no-effects finding for three reasons. First, the reasonably attainable analysis considers the effect of a given volume on diversions of advanced biofuels and feedstocks from existing uses. Unlike the analysis in this memorandum, it does not specifically assess the impacts of that volume on land use, listed species, or critical habitat. Second, even assuming that, in the abstract, diversions increase the likelihood of land-use changes that harm ESA species (a highly speculative proposition), we do not believe the potential diversions caused by the 2020 advanced biofuel volume would do so. The gap between the reasonably attainable volume and the required volume is a small fraction of the volume requirement (~0.09 billion gallons of advanced biodiesel and renewable diesel), which could be produced with ~2.5% of the projected 2019/2020 domestic vegetable oil production. Given the other market circumstances, particularly the high stock of oilseeds, we do not believe this will cause increased oilseed cultivation. Third, other economic factors could allow the market to meet the advanced biofuels standard without any diversion, including higher than expected oilseed

In summary, we conclude that with respect to biodiesel, the 2020 RFS standards do not affect listed species or their critical habitats because production of oilseed crops, such as soybeans and canola, are driven by demand for high protein animal feed and crop rotation, rather than demand for vegetable oils as biodiesel and renewable diesel feedstocks. We note that the position that the RFS volumes do not drive planting of oilseed crops (such as soybeans and canola) in the U.S. is supported by several commenters, including the American Soybean Association,²⁷ the Nebraska Soybean Association,²⁸ the International Council on Clean Transport,²⁹ Growth Energy³⁰ and the Union of Concerned Scientists.³¹ This is particularly true for 2020 given that the unusually large stocks of oilseeds in the U.S., along with the continuing Chinese tariffs on soybean produced in the U.S. and low prices for soybeans and soybean oil, have resulted in significantly lower projections for domestic soybean production in 2019 and 2020.³² Finally, as discussed above with respect to corn ethanol, even if the 2020 RFS standards did impact oilseed production in 2020, any specific impacts on listed species or critical habitat from oilseed cultivation would still not be caused by the 2020 RFS standards.

3. Cellulosic Biofuel

As with biodiesel and renewable diesel, we do not expect that cellulosic biofuel would be used in the transportation fuel market in appreciable quantities absent the RFS program or other incentives. The 2020 RFS standards, therefore, are likely to result in the increased production and use of cellulosic biofuel in 2020. However, we do not expect that these increases will cause any effects on listed species or critical habitats.³³ The vast majority of the cellulosic biofuel volume projected to be supplied in 2020 is CNG/LNG derived from landfill biogas, production which is not known to have any impacts on listed species or critical habitat. Such production does not require any crop or other plant input. The remainder of the cellulosic biofuel volume is expected to be produced from crop residue (such as corn kernel fiber) and woody residues,³⁴ which are not expected to have any impact on crop cultivation decisions or the habitat of listed species. As with corn and oilseeds, even if demand for agricultural residues were to affect crop production, any specific impacts on listed species or critical habitat from cellulosic biofuel

production, increased oilseed crush (according to the October 2019 WASDE report, only 58% of oil contained in harvested oilseeds is expected to be extracted in 2020, but the market could choose to extract a higher percentage), increased collection of waste oils, or lower than expected consumption of vegetable oils in the food or industrial markets.

²⁷ EPA-HQ-OAR-2019-0136-0177

²⁸ EPA-HQ-OAR-2019-0136-0117

²⁹ EPA-HQ-OAR-2018-0167-0531.

³⁰ EPA-HQ-OAR-2019-0136-0726.

³¹ EPA-HQ-OAR-2018-0167-0535.

³² See OECD-FAO Agricultural Outlook (July 2019) projections, shown in Figure 3.

³³ As noted in the 2011 *Biofuels and Environment: First Triennial Report to Congress* (EPA/600/R-10/183F) and reaffirmed in the 2018 *Biofuels and Environment: Second Triennial Report to Congress* (EPA/600/R-18/195), “EISA goals for biofuels production can be achieved with minimal environmental impacts if existing conservation and best management practices are widely employed, concurrent with advances in technologies that facilitate the use of second generation feedstocks.” Pages viii and x in the June 2018 report. Cellulosic biofuels are generally produced from feedstocks that are considered second generation feedstocks.

³⁴ Qualifying cellulosic biofuels can be produced from slash, pre-commercial thinnings, and tree residue. These terms are defined in 40 CFR 80.1401.

production or cultivation would still not be caused by the 2020 RFS standards. Therefore, the 2020 cellulosic biofuel requirement does not affect listed species or critical habitat.

C. Second Triennial Report to Congress and Other Studies

In June 2018, EPA released *Biofuels and the Environment: Second Triennial Report to Congress*, a review of the environmental impacts of biofuels.³⁵ This report did not specifically address the impacts of the 2020 RFS standards. In addition, while the report did discuss literature that generally relates biofuels to crop cultivation, such statements are of limited relevance to the 2020 RFS standards as they did not purport to establish any causal link between the 2020 RFS standards and increased crop cultivation.

Among the specific conclusions of the June 2018 report, EPA found that “[t]he conversion of environmentally-sensitive land to cropland consistent with increased production of current biofuel feedstocks is associated with negative impacts to ecosystem health and biodiversity.” However, the report did not purport to establish a causal connection between the 2020 RFS standards or any other RFS annual rule and land use changes.³⁶ The report also did not specifically evaluate potential effects of biofuels on listed species or critical habitat, or severe environmental harm.

Thus, the report is of limited utility in assessing the environmental impacts of the 2020 RFS standards. To the extent the report is relevant, however, it is consistent with our findings. The June 2018 report concluded that “most environmental effects of biofuel production are associated with the feedstock production stage,” referring to the production of corn, soy, and other crops.³⁷ As we have explained, however, the 2020 RFS standards do not affect crop production.³⁸

We acknowledge that certain statements in the June 2018 report may appear inconsistent with our conclusions that increased production of corn ethanol or oilseed feedstocks for biodiesel would not occur but for the 2020 RFS standards with reasonable certainty. For example, the June 2018 report states that “If feedstock production for biofuels were evenly distributed across the country, then 25% and 2.5% of corn and soybean acreage, respectively, are reasonable first order estimates attributable to biofuels.”³⁹ As explained in the June 2018 report, these estimates and related statements, however, merely relate land use change to biofuels based on the portion of the crop that is used to produce biofuel. For instance, the 2.5% soybean acreage figure is derived by multiplying the percentage of aggregate soybean production used for biofuel

³⁵ U.S. EPA (2018). *Biofuels and the Environment: Second Triennial Report to Congress*. U.S. Environmental Protection Agency, EPA/600/R-18/195. Throughout this memorandum we refer to this document as the “June 2018 report.”

³⁶ Id. at Major Findings & Box 3.

³⁷ Id. at 53 & Box 3.

³⁸ The *Biofuels and the Environment: Second Triennial Report to Congress* also described environmental effects associated with biofuel production unrelated to the feedstock production stage, such as emissions from biofuel production facilities, but noted that these impacts are far smaller in magnitude. Such impacts do not but-for cause any impact on listed species or critical habitat with reasonable certainty, and in the case of corn ethanol would be expected to occur even in the absence of the 2020 RFS standards.

³⁹ Id. at 61 & 62.

production (12%) by the percentage of the physical soybean used for biofuel production (20% by weight). The analysis did not consider the complex regulatory and market factors that are relevant to such relationships.⁴⁰ Furthermore, the 2.5% estimate does not consider the degree to which increased soybean production is being driven by demand for high protein animal feed (which is approximately 80% of the soybean by weight, and the primary product of soybean cultivation) or other economic factors and would have happened regardless of increased demand for biodiesel and renewable diesel. As further explained in the June 2018 report, this kind of proportional analysis is not accurate and leads to incorrect attribution of land use change and biofuels. Currently, there is no scientific consensus about how to accurately and consistently attribute land use change in the context of biofuels.⁴¹

The June 2018 report contained references to several published papers purporting to have established a causal link between the RFS program and the conversion of land to cropland used to provide feedstocks for biofuel production.⁴² To estimate the impact of the RFS program on land conversion, these papers first had to determine the increase in biofuel production attributable to the RFS program since, as discussed above, the mechanism by which the RFS program could cause land conversion is by increasing demand for biofuel feedstocks, and thus increasing the market price for these feedstocks. These papers generally relied on work by Carter and colleagues to establish the volume of biofuel production attributable to the RFS program.⁴³ After reviewing Carter's paper, EPA has determined that Carter's estimates of biofuel production attributable to the RFS program are unsupported assumptions.

Carter makes the assumption that the applicable standards under the RFS1 program (2006 - 2009) were not binding, and that it was only the incremental standards under the RFS2 program (2010 and later years) that drove biofuel use. However, Carter merely assumes that correlations between RFS volumes, ethanol production, and land use changes, indicate that increases in ethanol production and land use changes were caused by the RFS program. The paper does so without considering the economic factors that played a role in the demand for ethanol during this time frame apart from any RFS requirements, such as the octane value of ethanol, crude oil prices and corn prices. Nor did Carter assess the impacts of other federal and state tax credits, mandates and incentives, and export markets. Carter also associates the dramatic increase in ethanol production capacity with an anticipation of new demand from Congressional bills and appear to conflate production capacity with actual demand for ethanol.⁴⁴

Since Lark and others relied on Carter's work to establish the attribution of biofuel production to the RFS program, their conclusions as to the attribution of land use change to the RFS program suffer from the same fundamental flaws. That is, they claim that the RFS program

⁴⁰ The report explicitly disclaims such conclusions by noting that "we cannot quantify these percentages with confidence at this time based solely on that information without new analyses." Id. at 54.

⁴¹ Id. x & Box 3.

⁴² See, e.g., "Impacts of the Renewable Fuel Standard on America's Land and Water Resources," Lark, et al. (Feb 15, 2019), available in the docket.

⁴³ See, e.g., "Commodity storage and the market effects of biofuel policies," Carter, Rausser, Smith (2017).

⁴⁴ Carter's paper only discusses the impacts of the RFS and ethanol production on land use change. Other papers have used similar methodology to examine the impact of biofuels on other crops such as soybeans and wheat. See, e.g., "Effects of the Renewable Fuel Standard on Corn, Soybean, and Wheat Prices," Smith, available in the docket for this action. These papers suffer from the same shortcomings as Carter's work, generally assuming that observed correlations demonstrate a causation without consideration of other factors.

caused land use changes based solely on correlations between the RFS volumes, ethanol production, and land use change, without analyzing the numerous other economic factors that affect ethanol and feedstock production as EPA has done in this memorandum for the 2020 standards.⁴⁵ To our knowledge, other researchers also either assess only the connection between biofuels and land-use changes or simply reference Carter, without independently analyzing the degree to which land use change is attributable to the RFS program (rather than biofuel production more generally).

It is also important to recognize that the June 2018 report was primarily a retrospective review of the impact of biofuel production on the environment, and did not specifically consider the 2020 RFS standard, nor factors unique to 2020 that will likely have a significant influence on the ultimate environmental impacts of these volumes in the future. Lark's and Carter's work suffers from this problem as well. For example, as discussed above, abnormally large stocks of oilseeds in the U.S. along with the continuing Chinese tariffs on soybean produced in the U.S., low prices for soybeans and soybean oil, and significantly lower projections for domestic soybean production in 2019 and 2020 are examples of the types of factors not considered in the June 2018 report.

D. Conclusion

In conclusion, for the reasons discussed in this memorandum, EPA has determined that the 2020 RFS annual rule will have no effect on listed species or their critical habitat.

⁴⁵ We do not dispute that Lark's work does indicate a likely connection between biofuel production generally and land conversion. In this memorandum EPA is only considering the effects of the 2020 RFS standards on listed species and their critical habitats, rather than the effects of biofuel production more generally.

From: Burch, Julia
Subject: RE: Materials to review for our 3/23/21 meeting at 2 pm?
To: Korotney, David; cathy.tortorici@noaa.gov; Burkholder, Dallas; Craig_Aubrey@fws.gov; Hambright, Rosemary; Karen Myers; Keith Paul; Li, Ryland (Shengzhi); Machiele, Paul; Michaels, Lauren; Nancy Brown-Kobil - NOAA Federal; Nelson, Karen; David Baldwin - NOAA Federal
Sent: March 22, 2021 3:30 PM (UTC-04:00)

These are also attached to the meeting invite for tomorrow.

Thanks!

From: Korotney, David <korotney.david@epa.gov>
Sent: Monday, March 22, 2021 3:24 PM
To: cathy.tortorici@noaa.gov; Burch, Julia <Burch.Julia@epa.gov>; Burkholder, Dallas <burkholder.dallas@epa.gov>; Craig_Aubrey@fws.gov; Hambright, Rosemary <Hambright.Rosemary.E@epa.gov>; Karen Myers <karen_myers@fws.gov>; Keith Paul <keith_paul@fws.gov>; Li, Ryland (Shengzhi) <Li.Ryland@epa.gov>; Machiele, Paul <machiele.paul@epa.gov>; Michaels, Lauren <Michaels.Lauren@epa.gov>; Nancy Brown-Kobil - NOAA Federal <nancy.brown-kobil@noaa.gov>; Nelson, Karen <nelson.karen@epa.gov>; David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Subject: RE: Materials to review for our 3/23/21 meeting at 2 pm?

Attached are two things we intend to go over. We may have one or two additional things that we show on our screen.

From: Cathy Tortorici - NOAA Federal <cathy.tortorici@noaa.gov>
Sent: Monday, March 22, 2021 2:23 PM
To: Burch, Julia <Burch.Julia@epa.gov>; Burkholder, Dallas <burkholder.dallas@epa.gov>; Craig_Aubrey@fws.gov; Hambright, Rosemary <Hambright.Rosemary.E@epa.gov>; Karen Myers <karen_myers@fws.gov>; Keith Paul <keith_paul@fws.gov>; Korotney, David <korotney.david@epa.gov>; Li, Ryland (Shengzhi) <Li.Ryland@epa.gov>; Machiele, Paul <machiele.paul@epa.gov>; Michaels, Lauren <Michaels.Lauren@epa.gov>; Nancy Brown-Kobil - NOAA Federal <nancy.brown-kobil@noaa.gov>; Nelson, Karen <nelson.karen@epa.gov>; David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Subject: Materials to review for our 3/23/21 meeting at 2 pm?

Dear all -

I was wondering if there were any materials we should be reviewing in preparation for our meeting this week.

Thanks so much -

Cathy T.

--

Cathy Tortorici
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NOAA's National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910
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(c) 301.602.2193
cathy.tortorici@noaa.gov

From: Korotney, David
Subject: Materials on attribution presented yesterday
To: Burch, Julia; Burkholder, David; Machiee, Paul; Michaels, Lauren; Li, Ryan (Shengzhi); Hambright, Rosemary; cathy.tortorici@noaa.gov; Nancy Brown-Kobi - NOAA Federal; Aubrey, Craig; Karen Myers; Nelson, Karen; David Baldwin - NOAA Federal
Cc: Keith Paul; Caldwell, Robert; Bhandar, Gurbakhash S.; Clark, Christopher; Herboesheimer, Courtney
Sent: March 24, 2021 8:18 AM (UTC-04:00)
Attached: Attribution summary.pptx

Attached are the additional materials I went through yesterday on (b) (5). Let me know if you have any questions.

(b) (5)

(b) (5)

(b) (5)

(b) (5)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

(b) (5)

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

From: Burch, Julia
Subject: Scheduling next TA on RFS meeting for EPA, FWS, NMFS
To: Burkholder, Dallas; Machiue, Paul; Michaels, Lauren; Korotney, David; Hambright, Rosemary; cathy.tortorici@noaa.gov; Nancy Brown-Kobi - NOAA Federal; Aubrey, Craig; Karen Myers; Nelson, Karen; David Baldwin - NOAA Federal; Miller, Meredith
Cc: Keith Paul; Cadwe, Robert; Bhandar, Gurbakhash S.; Clark, Christopher; LeDuc, Stephen
Sent: May 5, 2021 4:12 PM (UTC-04:00)

Hello!

The dates in the last two doodle polls didn't work for FWS so we are trying again. Please fill out this [new doodle poll](#) that goes into June. Hopefully we can find a time that works for all. Thanks for your patience and flexibility!

Regards,

Julia Burch
Acting Director of the Policy and Communications Center
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
202-564-0961 (desk)
202-853-4701 (cell)
(Pronouns: she/her)

From: Burch, Julia
Subject: TA on RFS - EPA, FWS, NMFS
To: Burkholder, Dallas; Machiele, Paul; Michaels, Lauren; Korotney, David; Hambright, Rosemary; cathy.tortorici@noaa.gov; Nancy Brown-Kobil - NOAA Federal; Aubrey, Craig; Karen Myers; Nelson, Karen; David Baldwin - NOAA Federal; Miller, Meredith; Keith Paul; Caldwell, Robert; Bhander, Gurbakhash S.; Clark, Christopher; LeDuc, Stephen
Sent: May 13, 2021 7:30 PM (UTC-04:00)

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```
join/19%3ameeting_MjdhMWQ4MGUtNDlkNy00ZWZiLWFiMWUtZjUzMTY3NDE5YWYy%40thread.v2/0?
context=%7b%22Tid%22%3a%2288b378b3-6748-4867-acf9-76aacbeca6a7%22%2c%22Oid%22%3a
%22439df38b-fa0a-453b-8c1a-bb5bfcc76647%22%7d>
```

Or call in (audio only)

(b) (6)

Find a local number<<https://dialin.teams.microsoft.com/556a4b78-4afd-4fe6-b721-1d903e8cdaa6?id=21420774>> | Reset PIN<<https://mysettings.lync.com/pstnconferencing>>
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Learn More<<https://aka.ms/JoinTeamsMeeting>> | Meeting options<https://teams.microsoft.com/meetingOptions/?organizerId=439df38b-fa0a-453b-8cla-bb5bfcc76647&tenantId=88b378b3-6748-4867-acf9-76aacbeca6a7&threadId=19_meeting_MjdhMWQ4MGUtNDlkNy00ZWZiLWFiMWUtZjUzMTY3NDE5YWUy@thead.v2&messageId=0&language=en-US>

From: Cathy Tortorici - NOAA Federa
Subject: Re: Schedule for RFS TA conversations
To: Burch, Julia
Cc: Nancy Brown-Kobi - NOAA Federa ; Karen Myers; Keith Pau
Sent: June 1, 2021 11:33 AM (UTC-04:00)

Julia -

That is correct and what we are working on now are some examples of analyses to present to you at an upcoming meeting. David Baldwin of my staff will be in touch with Karen to see what we can come up with.

Cathy T.

On Tue, Jun 1, 2021 at 11:15 AM Burch, Julia <Burch.Julia@epa.gov> wrote:

Hello!

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Regards,

Julia Burch

Office of Transportation and Air Quality

U.S. Environmental Protection Agency

202-564-0961 (desk)

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(Pronouns: she/her)

--

Cathy Tortorici
Chief, ESA Interagency Cooperation Division
Office of Protected Resources
NOAA's National Marine Fisheries Service
1315 East-West Highway

Silver Spring, MD 20910
(w) 301.427.8495
(c) 301.602.2193
cathy.tortorici@noaa.gov

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To: Burkholder, Dallas; Machiele, Paul; Michaels, Lauren; Korotney, David; Hambright, Rosemary; cathy.tortorici@noaa.gov; Nancy Brown-Kobil - NOAA Federal; Aubrey, Craig; Karen Myers; Nelson, Karen; David Baldwin - NOAA Federal; Miller, Meredith; Keith Paul; Caldwell, Robert; Bhander, Gurbakhash S.; Clark, Christopher; LeDuc, Stephen
Sent: May 20, 2021 11:56 AM (UTC-04:00)
Attached: Attribution summary.pptx, Corn land use causal diagram.xlsx, ESA Section 7 Consultation Brief Overview version 2.pptx

Agenda for 5.20.21

- * We finish up our conversation from last time - any lingering questions on
- (b) (5)
- * FWS share their approach to consultation and any specific feedback for projects like RFS
- * NMFS share their approach to consultation and any specific feedback for projects like RFS (see slides attached)
- * Discuss meeting schedule moving forward
- * Anything else?

Microsoft Teams meeting

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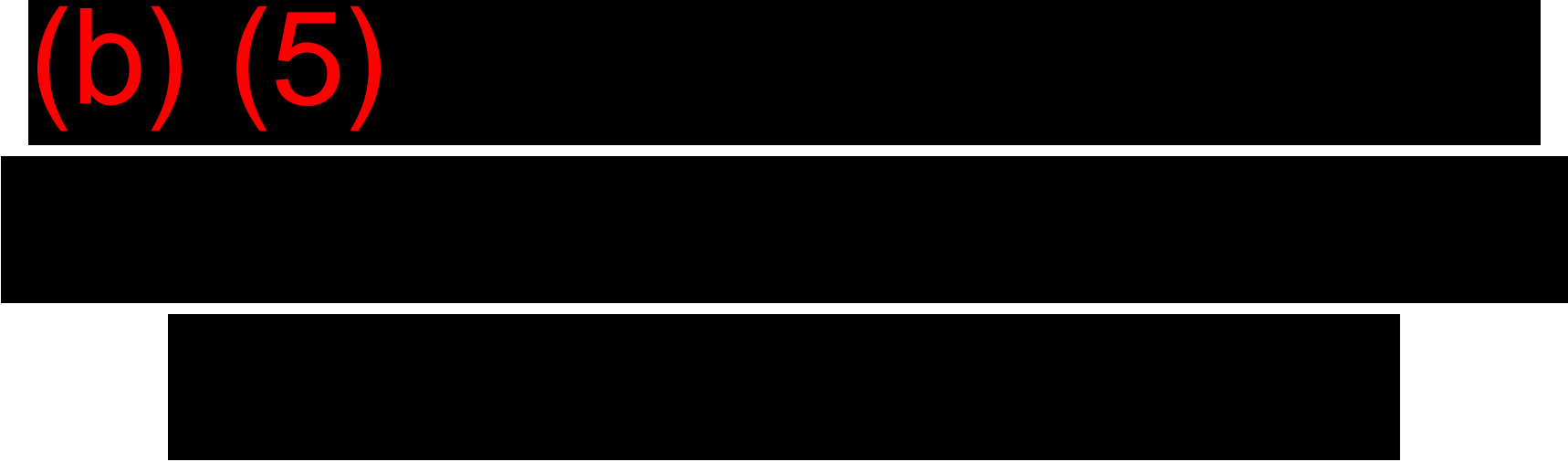
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%22439df38b-fa0a-453b-8c1a-bb5bfcc76647%22%7d>
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Or call in (audio only)

(b) (5)

Find a local number<<https://dialin.teams.microsoft.com/556a4b78-4afd-4fe6-b721-1d903e8cdaa6?id=21420774>> | Reset PIN<<https://mysettings.lync.com/pstnconferencing>>
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Learn More<<https://aka.ms/JoinTeamsMeeting>> | Meeting options<https://teams.microsoft.com/meetingOptions/?organizerId=439df38b-fa0a-453b-8cla-bb5bfc76647&tenantId=88b378b3-6748-4867-acf9-76aacbeca6a7&threadId=19_meeting_MjdhMWQ4MGUtNDlkNy00ZWZiLWFiMWUtZjUzMTY3NDE5YWUy@thead.v2&messageId=0&language=en-US>

(b) (5)



(b) (5)

(b) (5)

(b) (5)

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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(b) (5)

[REDACTED]

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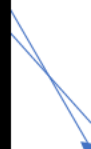
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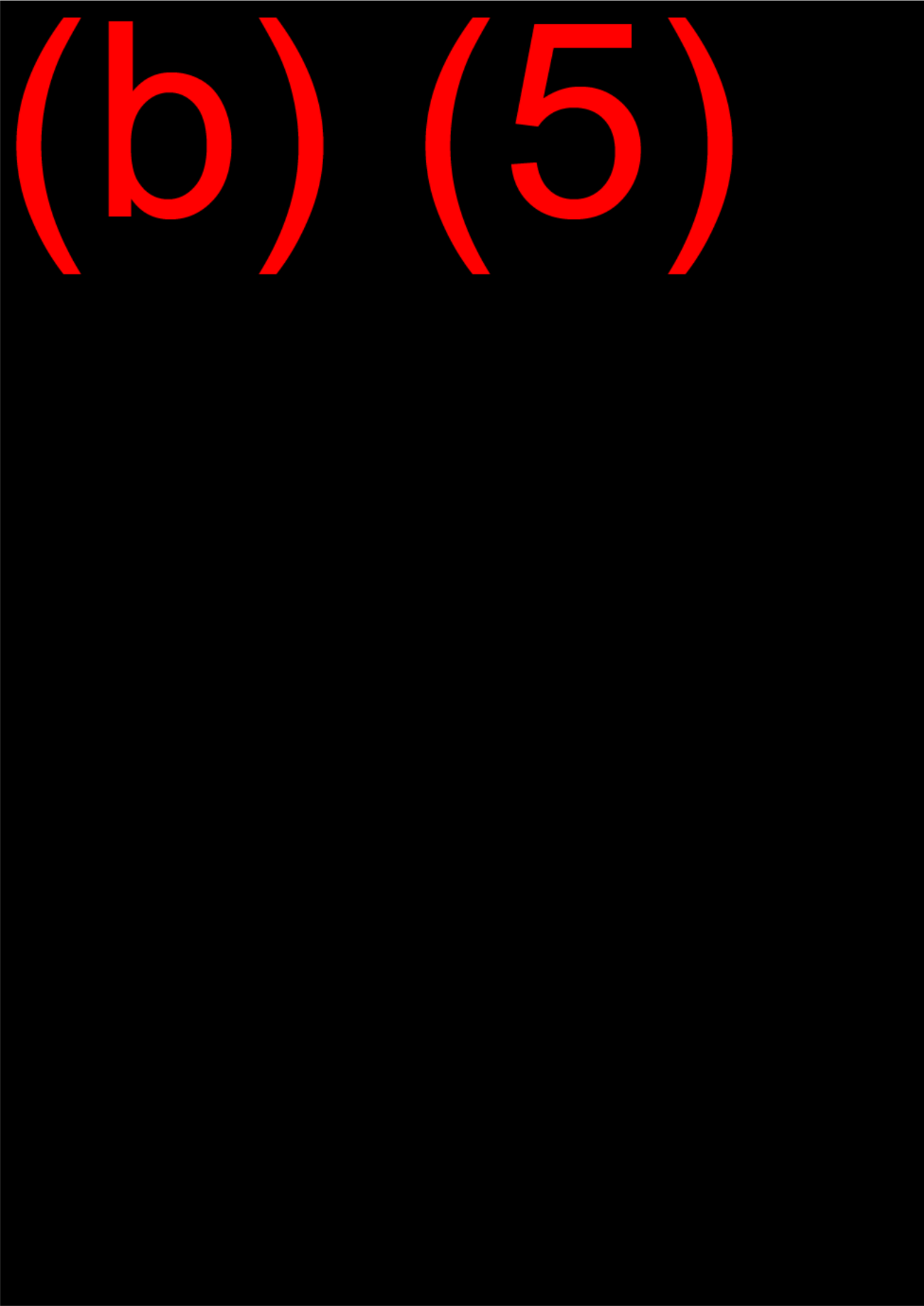
[REDACTED]

(b) (5)



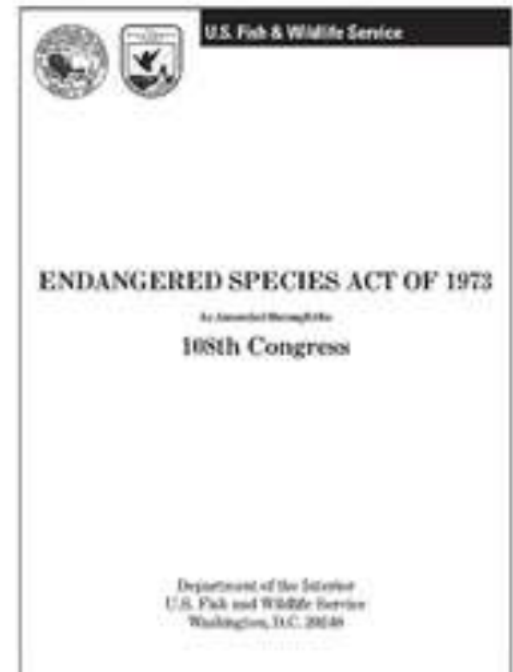
(b) (5)

(b) (5)



The Endangered Species Act

- Focuses on protecting species in their natural environments
- Gives joint authority to NOAA's National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS)



ESA Section 7



Interagency Cooperation

7(a)(1): Proactive conservation

- Federal agencies shall, in consultation with the Secretary, use their authorities to carry out programs for the conservation of endangered and threatened species

7(a)(2): Avoid jeopardy and destruction/adverse modification

- Each Federal agency shall, in consultation with the Secretary, insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat

How Does Consultation Begin?



- Federal action agency has a proposed action that may affect listed species and/or critical habitat
- Begins coordination with Service(s)
- Initiation of consultation
 - Informal consultation: initiation letter
 - Formal consultation: initiation package

Initiation Requirements

- Purpose of the action
- Duration and timing
- Location
- Specific components and how carried out
- Maps, drawings, blueprints or schematics
- Any other information on nature and scope relevant to effects
- Map or description of action area
- Information on species and habitat in action area
- Description of effects

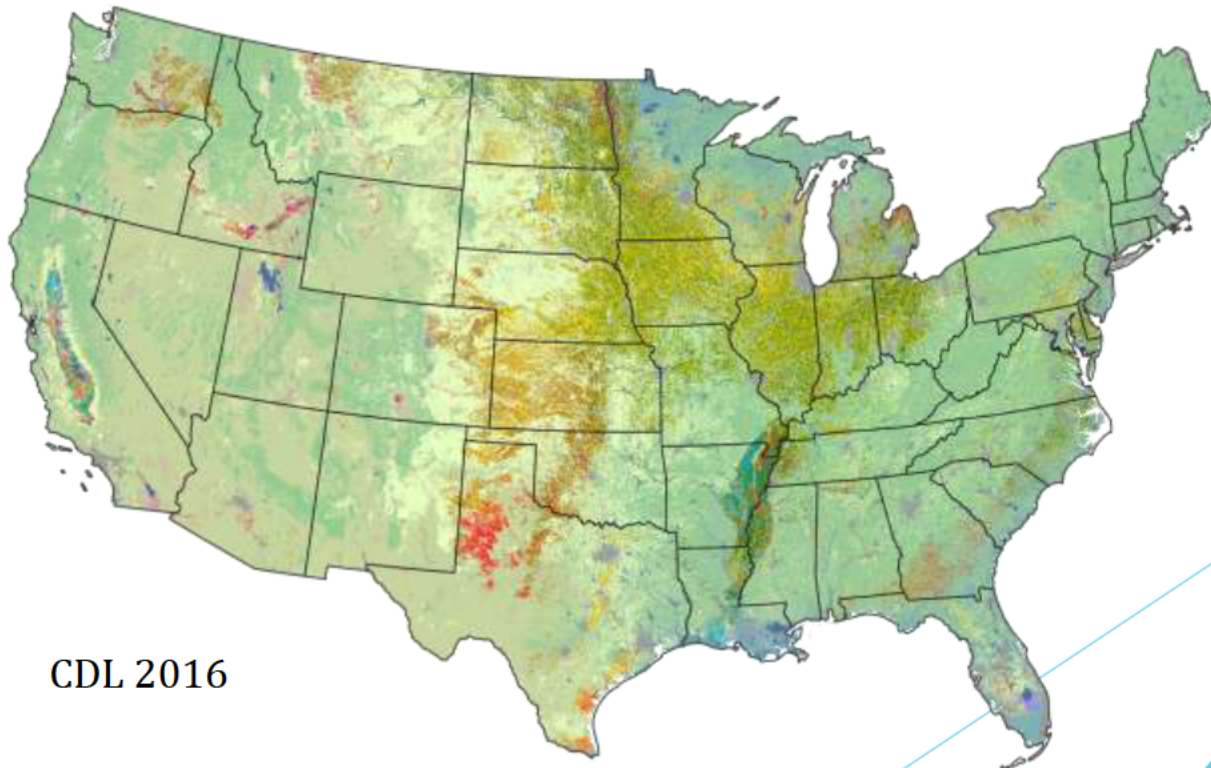


Assessing the Action Area

- Consider all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.
- Compare map of the action area to maps of species' ranges and critical habitats.
- Evaluate the spatial extent of all areas potentially affected to identify the species and critical habitat that need further consideration (May Affect).

Mapping the Action Area

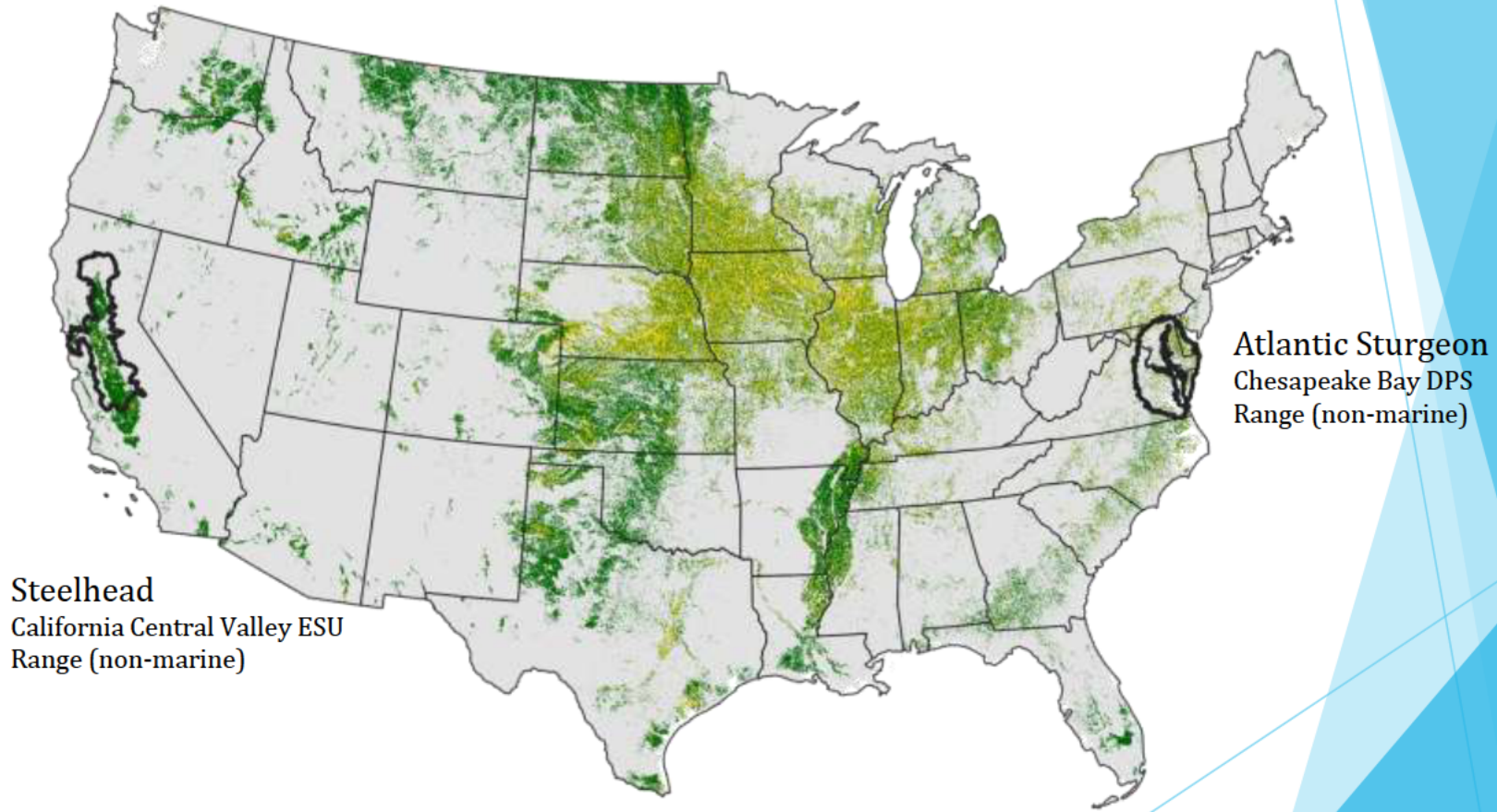
- **Cropland Data Layer (CDL)**
 - Produced by U.S. Department of Agriculture
 - Represents agricultural crops
 - 111 crop classes + general land cover classes
 - Leverages USGS National Land Cover Database (NLCD)



CDL 2016

Comparing the Action Area

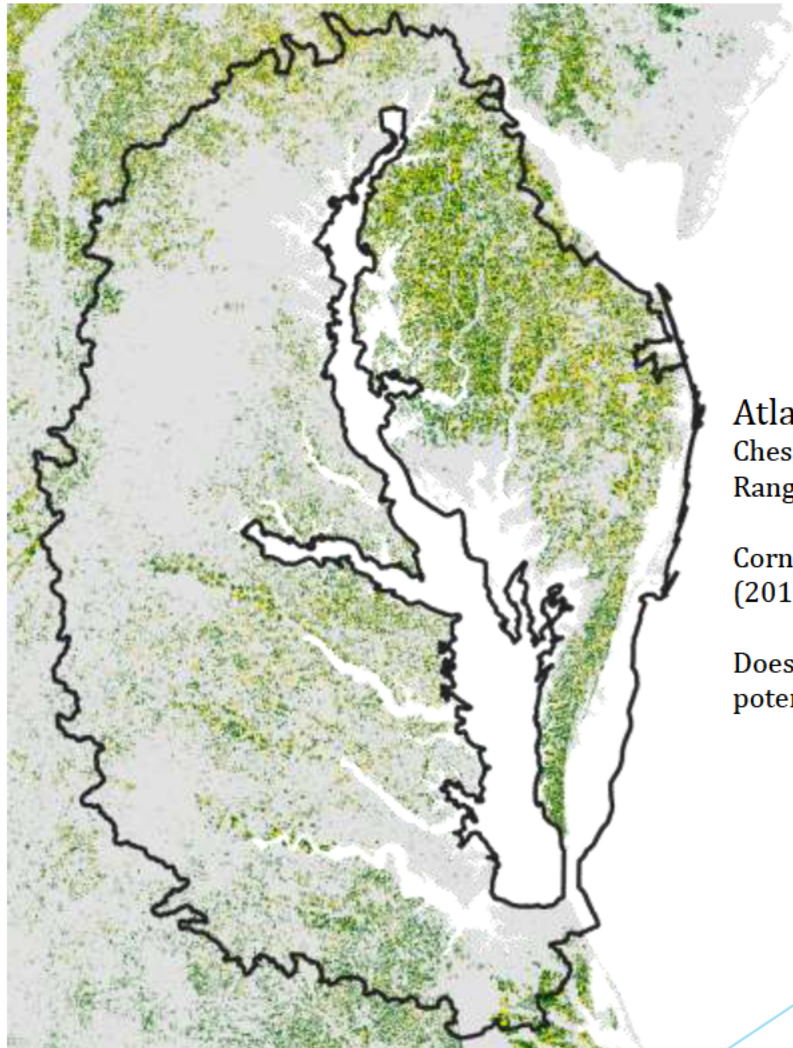
Corn (yellow) and Cultivated (green, other than corn)



Overlap of Action Area and Species needs to consider areas outside CDL layers
For example, accounting for downstream transport of pesticides, nutrients and sediment

Comparing the Action Area

Corn (yellow) and Cultivated (green, other than corn)



Atlantic Sturgeon
Chesapeake Bay DPS
Range (non-marine)

Corn averaged 6.3% of range
(2010-2015)

Doesn't incorporate extent of
potential effects to marine habitat

How Are Effects of the Action Defined?



- All consequences caused by the proposed action
- May Affect, Not Likely to Adversely Affect – All effects are beneficial, insignificant, extremely unlikely to occur
 - Informal Consultation
- May Affect, Likely to Adversely Affect – adverse effects (take) can be detected in any way
 - Formal Consultation

What is Considered an Effect?



- **Take:** “to *harass, harm*, pursue, hunt, shoot, kill...”
 - **Harass:** “...to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering”
 - **Harm:** “any significant habitat modification or degradation that results in death or injury... significantly impairing behavior patterns such as breeding, feeding, or sheltering”

Services Response



- Informal Consultation: Letter of Concurrence
- Formal Consultation: Biological Opinion
 - Including programmatic consultations

Reinitiation Triggers

Required and shall be requested by action agency or Service where discretionary Federal involvement or control has been retained or is authorized by law and:

- The amount or extent of take is exceeded
- New information reveals effects of the action in a manner or to an extent not considered
- The identified action is modified in a manner that causes an effect that was not considered
- New species listed or critical habitat designated that may be affected



From: Burch, Juia
Subject: Schedule for RFS TA conversations
To: cathy.tortorici@noaa.gov; Nancy Brown-Kobi - NOAA Federal; Karen Myers; Keith Pau
Sent: June 1, 2021 11:16 AM (UTC-04:00)

Hello!

At the end of our last meeting, after I had to drop off, I think everyone decided that meeting every two weeks for the foreseeable future made sense. Is there a day of the week or time block that works best for you? Please also let me know who from your agency should be included in those meetings.

Thanks!

Regards,

Julia Burch
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
202-564-0961 (desk)
202-853-4701 (cell)
(Pronouns: she/her)

From: Cathy Tortorici - NOAA Federa
Subject: Re: Schedule for RFS TA conversations
To: Burch, Julia
Cc: Nancy Brown-Kobi - NOAA Federa ; Karen Myers; Keith Pau
Sent: June 10, 2021 9:41 AM (UTC-04:00)

How about Tuesdays in the afternoon.

Sent from my iPhone

On Jun 10, 2021, at 6:36 AM, Burch, Julia <Burch.Julia@epa.gov> wrote:

Just checking in to see if there is day of the week that works best for a recurring meeting. Thanks!

From: Cathy Tortorici - NOAA Federal <cathy.tortorici@noaa.gov>
Sent: Tuesday, June 1, 2021 11:33 AM
To: Burch, Julia <Burch.Julia@epa.gov>
Cc: Nancy Brown-Kobil - NOAA Federal <nancy.brown-kobil@noaa.gov>; Karen Myers <karen_myers@fws.gov>; Keith Paul <keith_paul@fws.gov>
Subject: Re: Schedule for RFS TA conversations

Julia -

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Cathy T.

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--

Cathy Tortorici

Chief, ESA Interagency Cooperation Division

Office of Protected Resources

NOAA's National Marine Fisheries Service

1315 East-West Highway

Silver Spring, MD 20910

(w) 301.427.8495

(c) 301.602.2193

cathy.tortorici@noaa.gov

From: Burch, Julia
Subject: RE: Schedule for RFS TA conversations
To: cathy.tortorici@noaa.gov
Cc: Nancy Brown-Kobi - NOAA Federal; Karen Myers; Keith Paul
Sent: June 10, 2021 9:37 AM (UTC-04:00)

Just checking in to see if there is day of the week that works best for a recurring meeting. Thanks!

From: Cathy Tortorici - NOAA Federal <cathy.tortorici@noaa.gov>
Sent: Tuesday, June 1, 2021 11:33 AM
To: Burch, Julia <Burch.Julia@epa.gov>
Cc: Nancy Brown-Kobil - NOAA Federal <nancy.brown-kobil@noaa.gov>; Karen Myers <karen_myers@fws.gov>; Keith Paul <keith_paul@fws.gov>
Subject: Re: Schedule for RFS TA conversations

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NOAA's National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910
(w) 301.427.8495
(c) 301.602.2193

cathy.tortorici@noaa.gov

From: Burch, Julia
Subject: ESA TA on RFS - NMFS, EPA, FWS
To: cathy.tortorici@noaa.gov; Karen Myers; Keith Paul; Machiele, Paul; Korotney, David; Miller, Meredith; Hambright, Rosemary; Bhandar, Gurbakhash S.; Nelson, Karen
Cc: Nancy Brown-Kobil - NOAA Federal; Valderrama, Cristina
Sent: June 10, 2021 10:02 AM (UTC-04:00)

As discussed, trying to establish a regular schedule for these meetings but we can tweak this timing if needed.

Materials will be distributed prior to the meetings.

Microsoft Teams meeting

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[Click here to join the meeting<https://teams.microsoft.com/l/meetup-join/19%3ameeting_YThhZjElMzgtMzk5OS00NzI5LTg3ZGYtNzAyMjJlNzllNDk3%40thread.v2/0?context=%7b%22Tid%22%3a%2288b378b3-6748-4867-acf9-76aacbeca6a7%22%2c%22Oid%22%3a%22439df38b-fa0a-453b-8c1a-bb5bfcc76647%22%7d>](https://teams.microsoft.com/l/meetup-join/19%3ameeting_YThhZjElMzgtMzk5OS00NzI5LTg3ZGYtNzAyMjJlNzllNDk3%40thread.v2/0?context=%7b%22Tid%22%3a%2288b378b3-6748-4867-acf9-76aacbeca6a7%22%2c%22Oid%22%3a%22439df38b-fa0a-453b-8c1a-bb5bfcc76647%22%7d%7d)

Or call in (audio only)

(b) (6)

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options<https://teams.microsoft.com/meetingOptions/?organizerId=439df38b-fa0a-453b-8c1a-bb5b5fcc76647&tenantId=88b378b3-6748-4867-acf9-76aacbeca6a7&threadId=19_meeting_YThhZjElMzgtMzk5OS00NzI5LTg3ZGYtNzAyM2JlNzllNDk3@thread.v2&messageId=0&language=en-US>

From: Burch, Julia
Subject: RE: Schedule for RFS TA conversations
To: cathy.tortorici@noaa.gov
Cc: Nancy Brown-Kobi - NOAA Federal; Karen Myers; Keith Paul
Sent: June 10, 2021 10:05 AM (UTC-04:00)

Thanks for getting back to me. I just sent a recurring scheduler for every other Tues at 1pm, starting next week. If that doesn't work for FWS, please let me know.

Thanks!

From: Cathy Tortorici - NOAA Federal <cathy.tortorici@noaa.gov>
Sent: Thursday, June 10, 2021 9:41 AM
To: Burch, Julia <Burch.Julia@epa.gov>
Cc: Nancy Brown-Kobil - NOAA Federal <nancy.brown-kobil@noaa.gov>; Karen Myers <karen_myers@fws.gov>; Keith Paul <keith_paul@fws.gov>
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(w) 301.427.8495
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Subject: RE: ESA TA on RFS - NMFS, EPA, FWS
To: cathy.tortorici@noaa.gov; Karen Myers; Keith Pau; Machie e, Pau; Korotney, David; Miller, Meredith; Hambright, Rosemary; Bhander, Gurbakhash S.; Nelson, Karen; Caldwell, Robert; Butler, Aron; Delity, Akshay
Cc: Nancy Brown-Kobi - NOAA Federal; Valderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy
Sent: June 15, 2021 12:35 PM (UTC-04:00)

Hello!

I just wanted to let you know that Paul Machiele and I will not be joining our meeting this afternoon. I will be running an all day FACA meeting and Paul has been pulled into a meeting with leadership. However, the rest of our colleagues from EPA will be on the call.

Thanks!

-----Original Appointment-----

From: Burch, Julia
Sent: Thursday, June 10, 2021 10:02 AM
To: Burch, Julia; Cathy Tortorici - NOAA Federal; Karen Myers; Keith Paul; Paul Machiele; Korotney, David; Miller, Meredith; Hambright, Rosemary; Bhander, Gurbakhash S.; Nelson, Karen; Caldwell, Robert; Butler, Aron; Delity, Akshay
Cc: Nancy Brown-Kobil - NOAA Federal; Valderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy
Subject: ESA TA on RFS - NMFS, EPA, FWS
When: Tuesday, June 15, 2021 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

As discussed, trying to establish a regular schedule for these meetings but we can tweak this timing if needed.

Materials will be distributed prior to the meetings.

Microsoft Teams meeting

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Or call in (audio only)

(b) (6)

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From: Cathy Tortorici - NOAA Federa
Subject: Re: ESA TA on RFS - NMFS, EPA, FWS
To: Burch, Julia
Cc: Karen Myers; Keith Pau ; Machie e, Pau ; Korotney, David; Mi er, Meredith; Hambright, Rosemary; Bhander, Gurbakhash S.; Ne son, Karen; But er, Aron; De ity, Akshay; Laye, Doug; Burkho der, Da as; Va derrama, Cristina; Lamson, Amy; David Ba dwin - NOAA Federa
Sent: June 29, 2021 10:18 AM (UTC-04:00)

Julia -

Please make sure to always include David Baldwin of my staff in your e-mails for this effort.

Thanks -

Cathy T.

On Tue, Jun 29, 2021 at 9:50 AM Burch, Julia <Burch.Julia@epa.gov> wrote:

Morning!

On the EPA side, we've been gathering questions as we move through this process both internally and in conjunction with y'all at the Services. Since this list has gotten sizeable, thought it might be a good idea to focus on those questions today and try clear the decks. Sound ok?

EPA's questions are below:

1. How does technical assistance differ from informal consultation? When we are ready, what is the process for initiating informal consultation?
2. (b) (5)
3. As we've discussed before, (b) (5)
4. (b) (5)
5. How to group species and their critical habitat there are around 1,600 species according to 2016 data. How can we address these species at the national level? Per the last meeting, we are under the impression that we will not be discussing every single species at the state level. If not, then how we can group them? For example, should all birds be in one group even if the impacts are different?
6. Is there any difference in environmental baseline at the state level vs. national level?
7. (b) (5)
8. We have a website link to monitored species from FWS. Does NMFS have a similar online website or database from which we can get a species list?

I'm sure these will lead to other questions and a full discussion (that may run over into our next meeting).

Thanks!

-----Original Appointment-----

From: Burch, Julia

Sent: Thursday, June 10, 2021 10:02 AM

To: Cathy Tortorici - NOAA Federal; Burch, Julia; Karen Myers; Keith Paul; Paul Machiele; Korotney, David; Miller, Meredith; Hambright, Rosemary; Bhandar, Gurbakhash S.; Nelson, Karen; Caldwell, Robert; Butler, Aron; Delity, Akshay; Laye, Doug

Cc: Burkholder, Dallas; Nancy Brown-Kobil - NOAA Federal; Valderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy

Subject: ESA TA on RFS - NMFS, EPA, FWS

When: Tuesday, June 29, 2021 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: Microsoft Teams Meeting

As discussed, trying to establish a regular schedule for these meetings but we can tweak this timing if needed.

Materials will be distributed prior to the meetings.

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--
Cathy Tortorici

Chief, ESA Interagency Cooperation Division

Office of Protected Resources

NOAA's National Marine Fisheries Service

1315 East-West Highway

Silver Spring, MD 20910

(w) 301.427.8495

(c) 301.602.2193

cathy.tortorici@noaa.gov

From: Burch, Julia
Subject: RE: ESA TA on RFS - NMFS, EPA, FWS
To: cathy.tortorici@noaa.gov; Karen Myers; Keith Pau; Machie e, Pau; Korotney, David; Miller, Meredith; Hambright, Rosemary; Bhander, Gurbakhash S.; Nelson, Karen; Butler, Aron; Delity, Akshay; Laye, Doug
Cc: Burkholder, Dallas; Valderrama, Cristina; Lamson, Amy
Sent: June 29, 2021 9:50 AM (UTC-04:00)

Morning!

On the EPA side, we've been gathering questions as we move through this process both internally and in conjunction with y'all at the Services. Since this list has gotten sizeable, thought it might be a good idea to focus on those questions today and try clear the decks. Sound ok?

EPA's questions are below:

1. How does technical assistance differ from informal consultation? When we are ready, what is the process for initiating informal consultation?
2. (b) (5) [REDACTED]
5. How to group species and their critical habitat there are around 1,600 species according to 2016 data. How can we address these species at the national level? Per the last meeting, we are under the impression that we will not be discussing every single species at the state level. If not, then how we can group them? For example, should all birds be in one group even if the impacts are different?
6. Is there any difference in environmental baseline at the state level vs. national level?
7. (b) (5) [REDACTED]
8. We have a website link to monitored species from FWS. Does NMFS have a similar online website or database from which we can get a species list?

I'm sure these will lead to other questions and a full discussion (that may run over into our next meeting).

Thanks!

-----Original Appointment-----

From: Burch, Julia
Sent: Thursday, June 10, 2021 10:02 AM
To: Cathy Tortorici - NOAA Federal; Burch, Julia; Karen Myers; Keith Paul; Paul Machiele; Korotney, David; Miller, Meredith; Hambright, Rosemary; Bhander, Gurbakhash S.; Nelson, Karen; Caldwell, Robert; Butler, Aron; Delity, Akshay; Laye, Doug
Cc: Burkholder, Dallas; Nancy Brown-Kobil - NOAA Federal; Valderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy
Subject: ESA TA on RFS - NMFS, EPA, FWS
When: Tuesday, June 29, 2021 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).
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From: Burch, Julia
Subject: RE: ESA TA on RFS - NMFS, EPA, FWS
To: Nelson, Karen; Korotney, David; cathy.tortorici@noaa.gov; Keith Pau; Karen Myers; Machie e, Pau; Miller, Meredith; Hambright, Rosemary; Bhandar, Gurbakhash S.; Butler, Aron; Deity, Akshay; Laye, Doug; David Baldwin - NOAA Federal
Cc: Nancy Brown-Kobi - NOAA Federal; Valderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkholder, Dallas
Sent: July 13, 2021 1:11 PM (UTC-04:00)
Attached: 7-13-21 RFS Meeting.pptx

Here are slides that David Baldwin is walking through.

-----Original Appointment-----

From: Burch, Julia
Sent: Thursday, June 10, 2021 10:02 AM
To: Nelson, Karen; Korotney, David; Cathy Tortorici - NOAA Federal; Keith Paul; Burch, Julia; Karen Myers; Paul Machiele; Miller, Meredith; Hambright, Rosemary; Bhandar, Gurbakhash S.; Caldwell, Robert; Butler, Aron; Delity, Akshay; Laye, Doug; David Baldwin - NOAA Federal
Cc: Nancy Brown-Kobil - NOAA Federal; Valderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkholder, Dallas
Subject: ESA TA on RFS - NMFS, EPA, FWS
When: Tuesday, July 13, 2021 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

As discussed, trying to establish a regular schedule for these meetings but we can tweak this timing if needed.

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From: Korotney, David
Subject: RE: The recent RFS ruling - We should talk about this on our next call please.
To: cathy.tortorici@noaa.gov; Burch, Julia; Bhandar, Gurbakhash S.; Hambright, Rosemary; Karen Myers; Keith Paul; Machiele, Paul; Miller, Meredith; Nancy Brown-Kobi - NOAA Federal; Nelson, Karen; Valderrama, Cristina
Sent: July 19, 2021 2:57 PM (UTC-04:00)

Absolutely. There are some decisions that our office will need to make about how to move forward, but there will be overlaps with our consultation on the 2020-2022 annual rule and Set rule regardless.

From: Cathy Tortorici - NOAA Federal <cathy.tortorici@noaa.gov>
Sent: Monday, July 19, 2021 2:50 PM
To: Burch, Julia <Burch.Julia@epa.gov>; Bhandar, Gurbakhash S. <Bhandar.Gurbakhash@epa.gov>; Hambright, Rosemary <Hambright.Rosemary.E@epa.gov>; Karen Myers <karen_myers@fws.gov>; Keith Paul <keith_paul@fws.gov>; Korotney, David <korotney.david@epa.gov>; Machiele, Paul <machiele.paul@epa.gov>; Miller, Meredith <Miller.Meredith@epa.gov>; Nancy Brown-Kobil - NOAA Federal <nancy.brown-kobil@noaa.gov>; Nelson, Karen <nelson.karen@epa.gov>; Valderrama, Cristina <Valderrama.Cristina@epa.gov>
Subject: The recent RFS ruling - We should talk about this on our next call please.

Dear all -

I am reading this over and we should talk about this ruling on our next call please.

Cathy T.

----- Forwarded message -----

From: David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Date: Mon, Jul 19, 2021 at 1:40 PM
Subject: Earthjustice coverage of RFS ruling
To: Cathy Tortorici - NOAA Federal <cathy.tortorici@noaa.gov>, Ryan DeWitt - NOAA Federal <ryan.dewitt@noaa.gov>, Tony Hawkes - NOAA Federal <tony.hawkes@noaa.gov>, Pat Shaw-Allen - NOAA Federal <pat.shaw-allen@noaa.gov>

Here's Earthjustice's notice on the ruling.

<https://earthjustice.org/news/press/2021/d-c-circuit-rules-in-earthjustice-case-challenging-epas-2019-renewable-fuel-volumes>

David

--

David H. Baldwin, Ph.D.
Biologist (Endangered Species)
NOAA Fisheries
Office of Protected Resources
email: David.Baldwin@noaa.gov

(b) (6)

--

Cathy Tortorici
Chief, ESA Interagency Cooperation Division
Office of Protected Resources

NOAA's National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910
(w) 301.427.8495
(c) 301.602.2193
cathy.tortorici@noaa.gov

From: Phillips, Tuana
Subject: ESA TA on RFS - NMFS, EPA, FWS
To: Burch, Julia; cathy.tortorici@noaa.gov; Karen Myers; Keith Paul; Machiele, Paul; Korotney, David; Miller, Meredith; Hambright, Rosemary; Nelson, Karen; Butler, Aron; Delity, Akshay; Laye, Doug; David Baldwin - NOAA Federal
Cc: Valderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkholder, Dallas; Nancy Brown-Kobil - NOAA Federal; Bhandar, Gurbakhash S.
Sent: August 10, 2021 12:41 PM (UTC-04:00)

Please accept this invitation as I am taking over from Julia as the primary POC for these meetings. Julia will cancel the calendar invitations that she has sent.

As discussed, trying to establish a regular schedule for these meetings but we can tweak this timing if needed.

Materials will be distributed prior to the meetings.

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(b) (6)

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options<https://teams.microsoft.com/meetingOptions/?organizerId=5a749786-198a-4dc2-a399-04d1be0fc617&tenantId=88b378b3-6748-4867-acf9-76aacbeca6a7&threadId=19_meeting_MDQ0ZjBhMTQtMjhkNC00OGEwLTk5ZDYtZDRiMDBmMzZhMjkY@thread.v2&messageId=0&language=en-US>

From: Korotney, David
Subject: Court critiques of the 2018 and 2019 No Effect findings
To: Karen Myers; Keith Pau ; Laye, Doug; David Baldwin - NOAA Federal ; cathy.tortorici@noaa.gov; Lamson, Amy; Nancy Brown-Kobi - NOAA Federal
Cc: Phillips, Tuana
Sent: August 5, 2021 9:38 AM (UTC-04:00)
Attached: Court critiques of 2018 & 2019 No Effect findings.xlsx

As we discussed on July 27, attached is a summary of the critiques that the U.S. Court of Appeals (DC Circuit) made on our No Effect findings in the 2018 and 2019 RFS standards rulemakings. The text is mostly cut-and-pasted from the court decision documents, though I fiddled with the language a bit to make each be a standalone item in the table.

(b) (5)



(b) (5)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

(b) (5)

[REDACTED]

[REDACTED]

(b) (6), (b) (5)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

(b) (5)
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

(b) (5)

[REDACTED]

[REDACTED]

(b) (5)

[REDACTED]

[REDACTED]

[REDACTED]

(b) (5)

[REDACTED]

[REDACTED]

From: Phillips, Tuana
Subject: ESA TA on RFS - NMFS, EPA, FWS
To: Nelson, Karen; Burch, Julia; cathy.tortorici@noaa.gov; Karen Myers; Keith Paul; Machiele, Paul; Korotney, David; Miller, Meredith; Hambright, Rosemary; Butler, Aron; Delity, Akshay; Laye, Doug; David Baldwin - NOAA Federal; Michaels, Lauren
Cc: Nancy Brown-Kobil - NOAA Federal; Valderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkholder, Dallas; Bhandar, Gurbakhash S.
Sent: August 24, 2021 9:46 AM (UTC-04:00)
Attached: 08.24.21 Agenda - ESA Technical Assistance on RFS.docx

Attached is an agenda for our meeting this afternoon.

Please accept this invitation as I am taking over from Julia as the primary POC for these meetings. Julia will cancel the calendar invitations that she has sent.

As discussed, trying to establish a regular schedule for these meetings but we can tweak this timing if needed.

Materials will be distributed prior to the meetings.

Microsoft Teams meeting

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[REDACTED]

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PIN<<https://mysettings.lync.com/pstnconferencing>>

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options<[https://teams.microsoft.com/meetingOptions/?organizerId=5a749786-198a-4dc2-a399-04d1be0fc617&tenantId=88b378b3-6748-4867-acf9-](https://teams.microsoft.com/meetingOptions/?organizerId=5a749786-198a-4dc2-a399-04d1be0fc617&tenantId=88b378b3-6748-4867-acf9-76aacbeca6a7&threadId=19_meeting_MDQ0ZjBhMTQtMjhkNC00OGEwLTk5ZDYtZDRiMDBmMzZhMjky@t)

76aacbeca6a7&threadId=19_meeting_MDQ0ZjBhMTQtMjhkNC00OGEwLTk5ZDYtZDRiMDBmMzZhMjky@t
hread.v2&messageId=0&language=en-US>

Agenda

Tuesday, August 24th 1-2 PM

ESA Technical Assistance on RFS with EPA, NMFS, and US FWS

Hello and Introductions

Setting up attorney/counsel meetings

- Discuss next steps and timing

Update on Biological Evaluation

- EPA has started putting together first draft based on the template provided
 - We plan to (b) (5)
 - Question: do we include all four actions in one biological evaluation, or make them separate consultations?
- We are assessing the potential action area, analyzing (b) (5)
[REDACTED]
 - Question: in addition to the map included in David Baldwin's presentation on 7/23, are there other materials/analyses we should start with in the interest of not duplicating efforts?
- Question: how often should there be discussion on the substance of the analyses prior to EPA sending the Biological Evaluation?

New causal chain diagram

- David K. will go over the diagram, if time allows

From: Korotney, David
Subject: Topics for Sept 7 consultation meeting on RFS
To: Phillips, Tuana; Burch, Julia; cathy.tortorici@noaa.gov; Karen Myers; Keith Pau; Machiee, Pau; Miller, Meredith; Hambright, Rosemary; Nelson, Karen; Butler, Aron; Deity, Akshay; Laye, Doug; David Baldwin - NOAA Federal
Cc: Vadderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkholder, Dallas; Michaels, Lauren; Nancy Brown-Kobi - NOAA Federal
Sent: August 30, 2021 12:45 PM (UTC-04:00)

For our standing meeting next Tuesday Sept 7, we (in OTAQ) do not have much to discuss. One option is to go through a revised causal chain diagram that demonstrates (b) (5). Another option, instead of or in addition to the causal chain diagram, is to have our respective counsels discuss the issues associated with consultation for past actions (i.e. 2018 and 2019 RFS standards). Thoughts?

From: Phi ips, Tuana
Subject: 8/24 Meeting notes: ESA TA on RFS - NMFS, EPA, FWS
To: Burch, Ju ia; cathy.tortorici@noaa.gov; Karen Myers; Keith Pau ; Machie e, Pau ; Korotney, David; Mi er, Meredith; Hambright, Rosemary; Ne son, Karen; But er, Aron; De ity, Akshay; Laye, Doug; David Ba dwin - NOAA Federa ; Michae s, Lauren
Cc: Va derrama, Cristina; C ark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkho der, Da as; Nancy Brown-Kobi - NOAA Federa ; Bhander, Gurbakhash S.; Michae s, Lauren
Sent: August 25, 2021 12:33 PM (UTC-04:00)
Attached: 08.24.21 Meeting notes - ESA Technica Assistance on RFS.docx

Hi all,

A few people have asked me about our meeting yesterday. I know some people were out so I've attached my notes here. Please let me know if you have any edits or additional thoughts.

Thank you,

Tuana Phillips

Office of Transportation and Air Quality (OTAQ)

U.S. Environmental Protection Agency

Phone: (202)-565-0074

Pronouns: she/her/hers

Meeting Notes

Tuesday, August 24th 1-2 PM

ESA Technical Assistance on RFS with EPA, NMFS, and US FWS

Update on rulemaking

- David K. shared (b) (5)

Setting up attorney/counsel meetings

- EPA is ready to engage with the Services' counsel
- Nancy Brown-Kobil is the point of contact for NMFS
- FWS is still working internally to figure this out but will share once they know more and have their point of contact

EPA asked the following question: do we include all four actions in one biological evaluation, or make them separate consultations?

- Generally, a biological assessment (BA) would examine the proposed action and specific decision points.

- (b) (5)

EPA asked the following question: how often should there be discussion on the substance of the analyses prior to EPA sending the Biological Evaluation?

- Both FWS and NMFS expressed that more coordination than normal would be ideal, especially since a lot of what we are dealing with for this BA is novel and complex. It would also allow the Services to start envisioning what a Biological Opinion would look like.

EPA asked the following question: in addition to the map included in David Baldwin's presentation on 7/23, are there other materials/analyses we should start with in the interest of not duplicating efforts?

- David B. shared that missing from his map are (b) (5)

- It is important to look at both the range maps for species and critical habitat area.
- The website, IPaC, may be helpful and worth exploring but likely not very effective.
- David B. can share range file and critical habitat maps based on pesticide analyses that have been done

- There was discussion on what (b) (5) [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
- The first step is to look at the action area, which will tell you which species may be affected. Then look at the magnitude and stressors of potential effects.

There was a question about whether to include international effects (e.g., palm oil in Malaysia)

- The Services confirmed that ESA is confined to the U.S. and the listed species and critical habitat within that border. Habitats and species outside the U.S. are not part of the ESA evaluation. If the action causes feedstocks and/or fuels to be produced in other countries (e.g., Malaysia) that are then imported to the U.S., the only part that falls under ESA is any potential impact on water or land in the U.S. from the action of transporting and using that fuel/feedstock in the U.S.

From: Machie e, Pau
Subject: RE: Topics for Sept 7 consu tation meeting on RFS
To: Korotney, David; Phi ips, Tuana; Burch, Ju ia; cathy.tortorici@noaa.gov; Karen Myers; Keith Pau ; Mi er, Meredith; Hambright, Rosemary; Ne son, Karen; But er, Aron; De ity, Akshay; Laye, Doug; David Ba dwin - NOAA Federa
Cc: Va derrama, Cristina; C ark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkho der, Da as; Michae s, Lauren; Nancy Brown-Kobi - NOAA Federa
Sent: August 30, 2021 12:50 PM (UTC-04:00)

We had talked about it being the Counsel meeting if its ready. If not, we could go through the causal chain. This would then be a prelude to us going through a sort of analytic blueprint for how we would intend to conduct the BE.

Paul

From: Korotney, David <korotney.david@epa.gov>
Sent: Monday, August 30, 2021 12:45 PM
To: Phillips, Tuana <phillips.tuana@epa.gov>; Burch, Julia <Burch.Julia@epa.gov>; cathy.tortorici@noaa.gov; Karen Myers <karen_myers@fws.gov>; Keith Paul <keith_paul@fws.gov>; Machiele, Paul <machiele.paul@epa.gov>; Miller, Meredith <Miller.Meredith@epa.gov>; Hambright, Rosemary <Hambright.Rosemary.E@epa.gov>; Nelson, Karen <nelson.karen@epa.gov>; Butler, Aron <butler.aron@epa.gov>; Delity, Akshay <Delity.Akshay@epa.gov>; Laye, Doug <Doug_Laye@fws.gov>; David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Cc: Valderrama, Cristina <Valderrama.Cristina@epa.gov>; Clark, Christopher <Clark.Christopher@epa.gov>; LeDuc, Stephen <LeDuc.Stephen@epa.gov>; Lamson, Amy <Lamson.Amy@epa.gov>; Burkholder, Dallas <burkholder.dallas@epa.gov>; Michaels, Lauren <Michaels.Lauren@epa.gov>; Nancy Brown-Kobil - NOAA Federal <nancy.brown-kobil@noaa.gov>
Subject: Topics for Sept 7 consultation meeting on RFS

For our standing meeting next Tuesday Sept 7, we (in OTAQ) do not have much to discuss. One option is to go through a revised causal chain diagram (b) (5). Another option, instead of or in addition to the causal chain diagram, is to have our respective counsels discuss the issues associated with consultation for past actions (i.e. 2018 and 2019 RFS standards). Thoughts?

From: Nancy Brown-Kobi - NOAA Federa
Subject: Re: Sept 7 discussion
To: Korotney, David
Cc: David Badwin - NOAA Federa ; Mi er, Meredith; cathy.tortorici@noaa.gov
Sent: September 1, 2021 4:30 PM (UTC-04:00)

What time on Tuesday?

On Wed, Sep 1, 2021 at 1:58 PM Korotney, David <korotney.david@epa.gov> wrote:

I would like to tentatively plan on having the attorney discussion of consultation for the RFS 2018 and 2019 standards rules at next Tuesday's regular meeting. I have confirmed that our attorneys can make it, including John Martin from DOJ, and FWS is still confirming that Shawn Finley and Arlynnell Dickson can attend. Does NOAA have attorneys that can attend?

--

Nancy Brown-Kobil
Attorney-Advisor
NOAA, Office of the General Counsel, Fisheries & Protected Resources Section
U.S. Department of Commerce

(b) (6)

Nancy.Brown-Kobil@noaa.gov

From: David Baldwin - NOAA Federal
Subject: Re: Sept 7 discussion
To: Nancy Brown-Kobil - NOAA Federal
Cc: Korotney, David; Miller, Meredith; cathy.tortorici@noaa.gov
Sent: September 1, 2021 4:37 PM (UTC-04:00)

Nancy,

The meeting is at 1 pm (Eastern) on Tuesday.

David

On Wed, Sep 1, 2021 at 1:30 PM Nancy Brown-Kobil - NOAA Federal <nancy.brown-kobil@noaa.gov> wrote:
What time on Tuesday?

On Wed, Sep 1, 2021 at 1:58 PM Korotney, David <korotney.david@epa.gov> wrote:

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Nancy Brown-Kobil
Attorney-Advisor
NOAA, Office of the General Counsel, Fisheries & Protected Resources Section
U.S. Department of Commerce
(b) (6)
Nancy.Brown-Kobil@noaa.gov

--

David H. Baldwin, Ph.D.
Biologist (Endangered Species)
NOAA Fisheries
Office of Protected Resources
email: David.Baldwin@noaa.gov
cell: (b) (6)

From: Korotney, David
Subject: Sept 7 discussion
To: cathy.tortorici@noaa.gov; David Baldwin - NOAA Federal; Nancy Brown-Kobi - NOAA Federal
Cc: Miller, Meredith
Sent: September 1, 2021 1:58 PM (UTC-04:00)

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From: Nancy Brown-Kobi - NOAA Federa
Subject: Re: Sept 7 discussion
To: David Baldwin - NOAA Federa
Cc: Korotney, David; Miller, Meredith; cathy.tortorici@noaa.gov
Sent: September 1, 2021 4:39 PM (UTC-04:00)

That's fine. I can attend on behalf of NOAA-GC.

On Wed, Sep 1, 2021 at 4:36 PM David Baldwin - NOAA Federal <david.baldwin@noaa.gov> wrote:

Nancy,

The meeting is at 1 pm (Eastern) on Tuesday.

David

On Wed, Sep 1, 2021 at 1:30 PM Nancy Brown-Kobil - NOAA Federal <nancy.brown-kobil@noaa.gov> wrote:
What time on Tuesday?

On Wed, Sep 1, 2021 at 1:58 PM Korotney, David <korotney.david@epa.gov> wrote:

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--

Nancy Brown-Kobil
Attorney-Advisor
NOAA, Office of the General Counsel, Fisheries & Protected Resources Section
U.S. Department of Commerce
(b) (6) (cell)
Nancy.Brown-Kobil@noaa.gov

--

David H. Baldwin, Ph.D.
Biologist (Endangered Species)
NOAA Fisheries
Office of Protected Resources
email: David.Baldwin@noaa.gov
cell: (b) (6)

--

Nancy Brown-Kobil
Attorney-Advisor
NOAA, Office of the General Counsel, Fisheries & Protected Resources Section
U.S. Department of Commerce
(b) (6)
Nancy.Brown-Kobil@noaa.gov

From: David Baldwin - NOAA Fisheries
Subject: Re: Sept 7 discussion
To: Korotney, David
Cc: Cathy Tortorici - NOAA Fisheries
Sent: September 7, 2021 11:47 AM (UTC-04:00)

David,

Is today's ESA TA on RFS meeting going to be an attorney discussion?

David

On Wed, Sep 1, 2021 at 10:58 AM Korotney, David <korotney.david@epa.gov> wrote:

I would like to tentatively plan on having the attorney discussion of consultation for the RFS 2018 and 2019 standards rules at next Tuesday's regular meeting. I have confirmed that our attorneys can make it, including John Martin from DOJ, and FWS is still confirming that Shawn Finley and Arlynnell Dickson can attend. Does NOAA have attorneys that can attend?

--

David H. Baldwin, Ph.D.
Biologist (Endangered Species)
NOAA Fisheries
Office of Protected Resources
email: David.Baldwin@noaa.gov
cell: (b) (6)

From: Cathy Tortorici - NOAA Federa
Subject: Re: Agenda for ESA TA on RFS meeting
To: Burch, Juia
Cc: David Baldwin - NOAA Federa ; Phillips, Tuana; Korotney, David
Sent: September 7, 2021 12:01 PM (UTC-04:00)

it's ok by me. Is Nancy B-K our attorney attending this meeting?

On Tue, Sep 7, 2021 at 11:55 AM Burch, Julia <Burch.Julia@epa.gov> wrote:

That was our plan. Does that work for NOAA?

From: David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Sent: Tuesday, September 7, 2021 11:40 AM
To: Phillips, Tuana <phillips.tuana@epa.gov>; Burch, Julia <Burch.Julia@epa.gov>
Cc: cathy.tortorici@noaa.gov
Subject: Agenda for ESA TA on RFS meeting

Is today's meeting going to be for the lawyers to discuss how to consult on the earlier standards?

David

--

David H. Baldwin, Ph.D.

Biologist (Endangered Species)

NOAA Fisheries

Office of Protected Resources

email: David.Baldwin@noaa.gov

cell: (b) (6)

--

Cathy Tortorici
Chief, ESA Interagency Cooperation Division
Office of Protected Resources
NOAA's National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910
(w) 301.427.8495
(c) 301.602.2193

cathy.tortorici@noaa.gov

From: Korotney, David
Subject: RE: Sept 7 discussion
To: Nancy Brown-Kobi - NOAA Federa; David Baldwin - NOAA Federa
Cc: Miller, Meredith; cathy.tortorici@noaa.gov
Sent: September 2, 2021 7:47 AM (UTC-04:00)

Great, thanks.

From: Nancy Brown-Kobil - NOAA Federal <nancy.brown-kobil@noaa.gov>
Sent: Wednesday, September 1, 2021 4:39 PM
To: David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Cc: Korotney, David <korotney.david@epa.gov>; Miller, Meredith <Miller.Meredith@epa.gov>; cathy.tortorici@noaa.gov
Subject: Re: Sept 7 discussion

That's fine. I can attend on behalf of NOAA-GC.

On Wed, Sep 1, 2021 at 4:36 PM David Baldwin - NOAA Federal <david.baldwin@noaa.gov> wrote:

Nancy,

The meeting is at 1 pm (Eastern) on Tuesday.

David

On Wed, Sep 1, 2021 at 1:30 PM Nancy Brown-Kobil - NOAA Federal <nancy.brown-kobil@noaa.gov> wrote:

What time on Tuesday?

On Wed, Sep 1, 2021 at 1:58 PM Korotney, David <korotney.david@epa.gov> wrote:

I would like to tentatively plan on having the attorney discussion of consultation for the RFS 2018 and 2019 standards rules at next Tuesday's regular meeting. I have confirmed that our attorneys can make it, including John Martin from DOJ, and FWS is still confirming that Shawn Finley and Arlynnell Dickson can attend. Does NOAA have attorneys that can attend?

--

Nancy Brown-Kobil
Attorney-Advisor
NOAA, Office of the General Counsel, Fisheries & Protected Resources Section
U.S. Department of Commerce
(b) (6)
Nancy.Brown-Kobil@noaa.gov

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David H. Baldwin, Ph.D.
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Nancy Brown-Kobil
Attorney-Advisor
NOAA, Office of the General Counsel, Fisheries & Protected Resources Section
U.S. Department of Commerce
(b) (6)
Nancy.Brown-Kobil@noaa.gov

From: Burch, Julia
Subject: RE: Agenda for ESA TA on RFS meeting
To: David Baldwin - NOAA Federal; Phillips, Tuana; Korotney, David
Cc: cathy.tortorici@noaa.gov
Sent: September 7, 2021 11:56 AM (UTC-04:00)

That was our plan. Does that work for NOAA?

From: David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Sent: Tuesday, September 7, 2021 11:40 AM
To: Phillips, Tuana <phillips.tuana@epa.gov>; Burch, Julia <Burch.Julia@epa.gov>
Cc: cathy.tortorici@noaa.gov
Subject: Agenda for ESA TA on RFS meeting

Is today's meeting going to be for the lawyers to discuss how to consult on the earlier standards?

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--

David H. Baldwin, Ph.D.
Biologist (Endangered Species)
NOAA Fisheries
Office of Protected Resources
email: David.Baldwin@noaa.gov
cell: (b) (6)

From: Korotney, David
Subject: RE: Sept 7 discussion
To: David Baldwin - NOAA Federal
Cc: cathy.tortorici@noaa.gov
Sent: September 7, 2021 12:42 PM (UTC-04:00)

Yes.

From: David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Sent: Tuesday, September 7, 2021 11:47 AM
To: Korotney, David <korotney.david@epa.gov>
Cc: cathy.tortorici@noaa.gov
Subject: Re: Sept 7 discussion

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David H. Baldwin, Ph.D.
Biologist (Endangered Species)
NOAA Fisheries
Office of Protected Resources
email: David.Baldwin@noaa.gov
cell: (b) (6)

From: Korotney, David
Subject: RE: Agenda for ESA TA on RFS meeting
To: cathy.tortorici@noaa.gov; Burch, Julia
Cc: David Baldwin - NOAA Federal
Sent: September 7, 2021 12:45 PM (UTC-04:00)

Cathy, I'm not sure who Nancy is, but if you want her to attend, please invite her.

Thanks.

From: Cathy Tortorici - NOAA Federal <cathy.tortorici@noaa.gov>
Sent: Tuesday, September 7, 2021 12:01 PM
To: Burch, Julia <Burch.Julia@epa.gov>
Cc: David Baldwin - NOAA Federal <david.baldwin@noaa.gov>; Phillips, Tuana <phillips.tuana@epa.gov>; Korotney, David <korotney.david@epa.gov>
Subject: Re: Agenda for ESA TA on RFS meeting

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Sent: Tuesday, September 7, 2021 11:40 AM
To: Phillips, Tuana <phillips.tuana@epa.gov>; Burch, Julia <Burch.Julia@epa.gov>
Cc: cathy.tortorici@noaa.gov
Subject: Agenda for ESA TA on RFS meeting

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David H. Baldwin, Ph.D.
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email: David.Baldwin@noaa.gov
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Cathy Tortorici
Chief, ESA Interagency Cooperation Division
Office of Protected Resources
NOAA's National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910
(w) 301.427.8495
(c) 301.602.2193
cathy.tortorici@noaa.gov

From: Korotney, David
Subject: Plan for next discussion of consultation on the RFS program
To: Machiee, Pau; Burch, Julia; Phillips, Tuana; Nelson, Karen; Michaels, Lauren; Miller, Meredith; Hambright, Rosemary; Deity, Akshay; Butler, Aron; Siega, Tod; cathy.tortorici@noaa.gov; Karen Myers; Keith Pau; Laye, Doug; David Baldwin - NOAA Federal; Martin, John H. (ENRD-WMRS); Nancy Brown-Kobi - NOAA Federal; Dickson, Arynne A
Sent: September 8, 2021 1:13 PM (UTC-04:00)

Thanks to all who participated in yesterday's discussion of consultation under ESA on the Renewable Fuel Standard (RFS) program. For the particular issue of (b) (5)

I think those of us at EPA now have a better idea of how to proceed.

I had offered to the attorneys that we could use the next regular biweekly meeting (Sept 21 at 1pm) to answer additional questions that they might have. Upon further reflection, I think our time would be better spent going through the causal chain diagram which (b) (5)

John Martin was not able to participate in the next meeting anyway. My suggestion is that, if the attorneys did have additional questions about how the RFS operates, the court remands of the 2018 and 2019 rules, or anything else, they can circulate them via e-mail and either we can answer them that way or, if the answers are too complicated for that, we can schedule a followup meeting. How does that sound?

From: Phillips, Tuana
Subject: ESA TA on RFS - NMFS, EPA, FWS
To: Burch, Julia; cathy.tortorici@noaa.gov; Karen Myers; Keith Paul; Machiele, Paul; Korotney, David; Miller, Meredith; Hambright, Rosemary; Nelson, Karen; Butler, Aron; Delity, Akshay; Laye, Doug; David Baldwin - NOAA Federal
Cc: Nancy Brown-Kobil - NOAA Federal; Valderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkholder, Dallas; Michaels, Lauren
Sent: September 21, 2021 11:11 AM (UTC-04:00)
Attached: 09.21.21 Agenda - ESA Technical Assistance on RFS.pdf

Attached is an agenda for today's (9/21) meeting at 1 PM.

Please accept this invitation as I am taking over from Julia as the primary POC for these meetings. Julia will cancel the calendar invitations that she has sent.

As discussed, trying to establish a regular schedule for these meetings but we can tweak this timing if needed.

Materials will be distributed prior to the meetings.

Microsoft Teams meeting

Join on your computer or mobile app

Click here to join the meeting<<https://teams.microsoft.com/l> (b) (6)

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PIN<<https://mysettings.lync.com/pstnconferencing>>

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options<[https://teams.microsoft.com/meetingOptions/?organizerId=5a749786-198a-4dc2-a399-04dlbe0fc617&tenantId=88b378b3-6748-4867-acf9-](https://teams.microsoft.com/meetingOptions/?organizerId=5a749786-198a-4dc2-a399-04dlbe0fc617&tenantId=88b378b3-6748-4867-acf9-76aacbeca6a7&threadId=19_meeting_MDQ0ZjBhMTQtMjhkNC00OGEwLTk5ZDYtZDRiMDBmMzZhMjky@t)

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Agenda

Tuesday, September 21st 1-2 PM

ESA Technical Assistance on RFS with EPA, NMFS, and US FWS

1. Update on Renewable Volume Obligation (RVO) Rule - EPA

- Currently in interagency review
- Reference in preamble to our obligations under ESA - Meredith Miller

2. Causal chain diagram - David Korotney

3. Next meetings in October - Tuana Phillips

- 10/5: Action area and species and critical habitat within it
- 10/19: Biofuel volume changes associated with each action, projected volumes and (b) (5)

From: Korotney, David
Subject: Causa chain diagram and description
To: Phillips, Tuana; Burch, Julia; cathy.tortorici@noaa.gov; Karen Myers; Keith Pau; Machiee, Pau; Miller, Meredith; Hambright, Rosemary; Nelson, Karen; Butler, Aron; Deity, Akshay; Laye, Doug; David Baldwin - NOAA Federal; Vadderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkholder, David; Michaels, Lauren; Nancy Brown-Kobi - NOAA Federal
Sent: September 22, 2021 11:42 AM (UTC-04:00)
Attached: Causa chain description for RFS program.docx

Attached is the diagram that I walked through at our meeting yesterday, along with some text describing each stage. Let me know if you have any questions.

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From: Phi ips, Tuana
Subject: Agenda for meeting today at 1 PM - ESA Technica Assistance on RFS
To: Burch, Ju ia; cathy.tortorici@noaa.gov; Karen Myers; Keith Pau ; Machie e, Pau ; Korotney, David; Mi er, Meredith; Hambright, Rosemary; Ne son, Karen; But er, Aron; De ity, Akshay; Laye, Doug; David Ba dwin - NOAA Federa ; Va derrama, Cristina; C ark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkho der, Da as; Nancy Brown-Kobi - NOAA Federa ; Michae s, Lauren
Sent: October 5, 2021 11:21 AM (UTC-04:00)
Attached: 10.05.21 Agenda - ESA Technica Assistance on RFS.pdf, 10.05.21_Action Area_ ESA Meeting.pptx

Good morning all,

Attached is an agenda for our meeting today at 1 PM. I am also attaching a presentation I will be going over during the second half of the meeting.

Best,

Tuana Phillips

Office of Transportation and Air Quality (OTAQ)

U.S. Environmental Protection Agency

Phone: (202)-565-0074

Pronouns: she/her/hers

Agenda

Tuesday, October 5th 1-2 PM

ESA Technical Assistance on RFS with EPA, NMFS, and US FWS

1. Discuss why we are (b) (5)
25 mins, David Korotney (EPA)
2. Discuss how to delineate the action area to identify critical habitat and species that may be affected
25 mins, Tuana Phillips (EPA)
3. Next meeting
 - 10/19: Biofuel volume changes associated with each rule, projected volumes and (b) (5)



Action Area, Species, and Critical Habitat Analyses

10/05/21

(b) (5)

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(b) (5)

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EPA Revised Method for National Level Listed Species Biological Evaluations of Conventional Pesticides (March 2020)

On off-site transport:

*“The endpoint that results in the farthest distance from the treated field where any effect to the listed species or its Prey, Pollination, Habitat and/or Dispersal (PPHD) may occur relative to a specific listed species will be used to determine the off-site transport distance for that species. **This distance is capped at 2600 feet** (the aerial limit of the AgDRIFT model; current version 2.1.1, December 2011) for several reasons discussed [in the document].”*

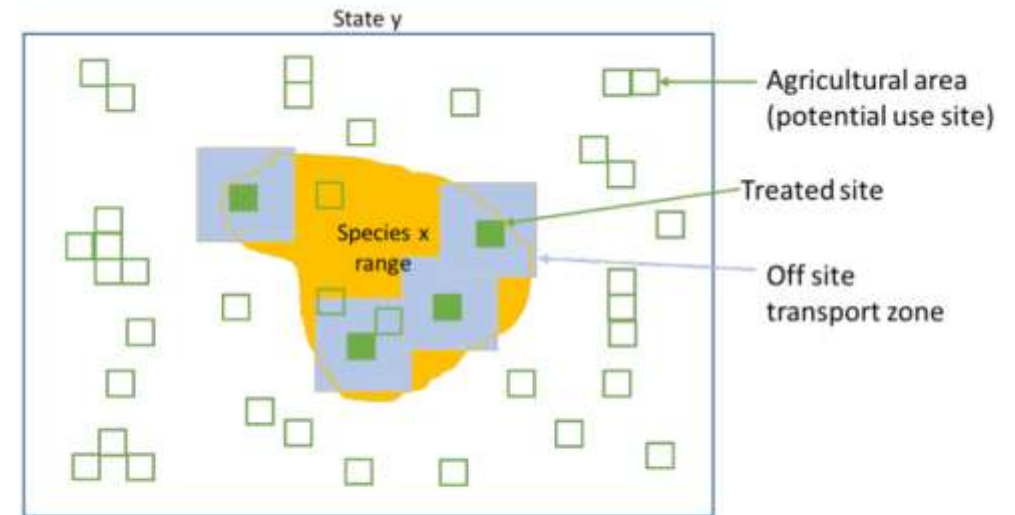


Figure 6. Conceptual illustration of approach for assigning treated acres to area relative to species range. In this example, PCT for the potential use site is 10%. Treated acres (green) are focused within range of assessed listed species (yellow). Grey areas represent off-site transport zone attributed to spray drift transport from treated acres.

<https://www3.epa.gov/pesticides/nas/revised/revised-method-march2020.pdf>

(b) (5)

(b) (5)

Possible Next Steps

(b) (5)

Thoughts?

From: Phi ips, Tuana
Subject: Upcoming ESA TA meeting on RFS, and other updates
To: cathy.tortorici@noaa.gov; Karen Myers; Keith Pau; Laye, Doug; David Ba dwin - NOAA Federa; Ryan DeWitt
Cc: Burch, Ju ia; Korotney, David; Mi er, Meredith; Hambright, Rosemary; Ne son, Karen; Buter, Aron; De ity, Akshay; Va derrama, Cristina; C ark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkho der, Da as; Nancy Brown-Kobi - NOAA Federa; Michael s, Lauren; Machie e, Pau
Sent: October 14, 2021 1:31 PM (UTC-04:00)

Hi Cathy, Karen, Keith, Doug, David, and Ryan,

We have a few updates for you below in bullets. I am also reaching out because our EPA team is proposing to cancel our scheduled meeting on Tuesday (10/19). At this time, we are still working on our analyses and don't have much to discuss with you all. That said, if there is something you'd like to discuss with us then please let us know.

Some updates:

- (b) (5)
- We received a FOIA request from the Center for Biological Diversity requesting records generated in connection to consultations and/or determinations made pursuant to Section 7 of the ESA for the 2021-2022 renewable fuel standards. We are in the process of requesting an extension to reply to this FOIA and as a first step we will be conducting a terms and custodians search to identify records. We may reach out to you if we identify records that were created by you or your agencies, and to determine whether or not they can be shared as part of this FOIA.

Thank you and let us know if you have any questions/thoughts.

Best,

Tuana Phillips

Office of Transportation and Air Quality (OTAQ)

U.S. Environmental Protection Agency

Phone: (202)-565-0074

Pronouns: she/her/hers

From: David Baldwin - NOAA Federal
Subject: Re: [EXTERNAL] Upcoming ESA TA meeting on RFS, and other updates
To: Karen Myers
Cc: cathy.tortorici@noaa.gov; Keith Paul; Laye, Doug; Ryan DeWitt
Sent: October 26, 2021 1:26 PM (UTC-04:00)

Karen,

(b) (5)

Cheers,
David

On Tue, Oct 26, 2021 at 5:30 AM Phillips, Tuana <phillips.tuana@epa.gov> wrote:

Hi Karen,

Thanks for your thoughts. I think what you described is in line with what we are thinking. (b) (5)

If you have any additional thoughts, please let us know.

Best,

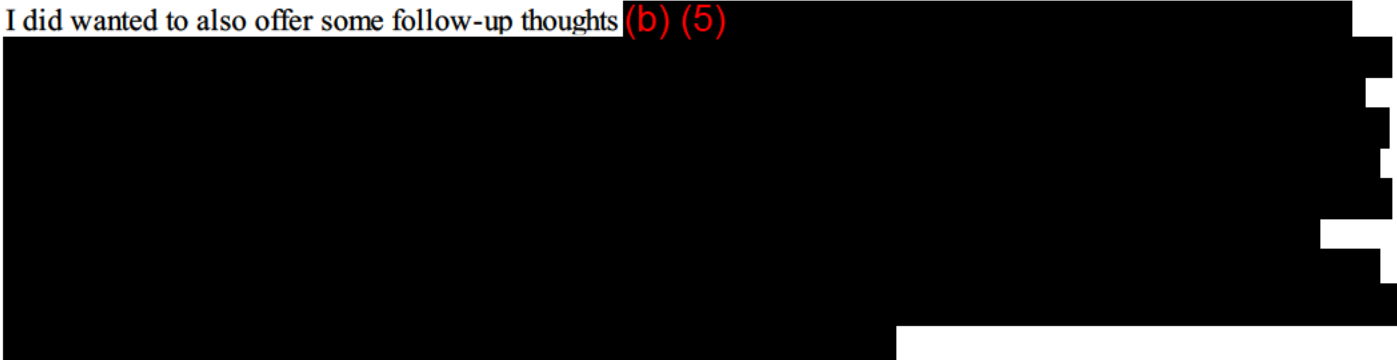
Tuana Phillips

From: Myers, Karen <karen_myers@fws.gov>
Sent: Thursday, October 21, 2021 5:32 PM
To: Phillips, Tuana <phillips.tuana@epa.gov>
Cc: Korotney, David <korotney.david@epa.gov>; cathy.tortorici@noaa.gov; Keith Paul <keith_paul@fws.gov>; Laye, Doug <Doug_Laye@fws.gov>; David Baldwin - NOAA Federal <david.baldwin@noaa.gov>; Ryan DeWitt <ryan.dewitt@noaa.gov>
Subject: RE: [EXTERNAL] Upcoming ESA TA meeting on RFS, and other updates

Hi Tuana,

Thanks for letting us know.

I did wanted to also offer some follow-up thoughts (b) (5)



Karen

Karen Myers

Manager, Branch of National Consultations

Ecological Services Program, MS: ES

U.S. Fish and Wildlife Service

5275 Leesburg Pike

Falls Church, VA 22041-3803

(b) (6)

} -<:))))%>

From: Phillips, Tuana <phillips.tuana@epa.gov>

Sent: Thursday, October 14, 2021 1:31 PM

To: cathy.tortorici@noaa.gov; Myers, Karen <karen_myers@fws.gov>; Paul, Keith <keith_paul@fws.gov>; Laye, Doug <Doug_Laye@fws.gov>; David Baldwin - NOAA Federal <david.baldwin@noaa.gov>; Ryan DeWitt <ryan.dewitt@noaa.gov>

Cc: Burch, Julia <Burch.Julia@epa.gov>; Korotney, David <korotney.david@epa.gov>; Miller, Meredith <Miller.Meredith@epa.gov>; Hambright, Rosemary <Hambright.Rosemary.E@epa.gov>; Nelson, Karen <nelson.karen@epa.gov>; Butler, Aron <butler.aron@epa.gov>; Delity, Akshay <Delity.Akshay@epa.gov>; Valderrama, Cristina <Valderrama.Cristina@epa.gov>; Clark, Christopher <clark.christopher@epa.gov>; LeDuc, Stephen <LeDuc.Stephen@epa.gov>; Lamson, Amy <Lamson.Amy@epa.gov>; Burkholder, Dallas <burkholder.dallas@epa.gov>; Nancy Brown-Kobil <nancy.brown-kobil@noaa.gov>; Michaels, Lauren <Michaels.Lauren@epa.gov>; Machiele, Paul <machiele.paul@epa.gov>

Subject: [EXTERNAL] Upcoming ESA TA meeting on RFS, and other updates

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

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Tuana Phillips

Office of Transportation and Air Quality (OTAQ)

U.S. Environmental Protection Agency

Phone: (202)-565-0074

Pronouns: she/her/hers

--

David H. Baldwin, Ph.D.

Biologist (Endangered Species)

NOAA Fisheries

Office of Protected Resources

email: David.Baldwin@noaa.gov

cell: (b) (6)

From: Phi ips, Tuana
Subject: RE: [EXTERNAL] Upcoming ESA TA meeting on RFS, and other updates
To: Karen Myers
Cc: Korotney, David; cathy.tortorici@noaa.gov; Keith Pau; Laye, Doug; David Baldwin - NOAA Federal; Ryan DeWitt
Sent: October 26, 2021 8:30 AM (UTC-04:00)

Hi Karen,

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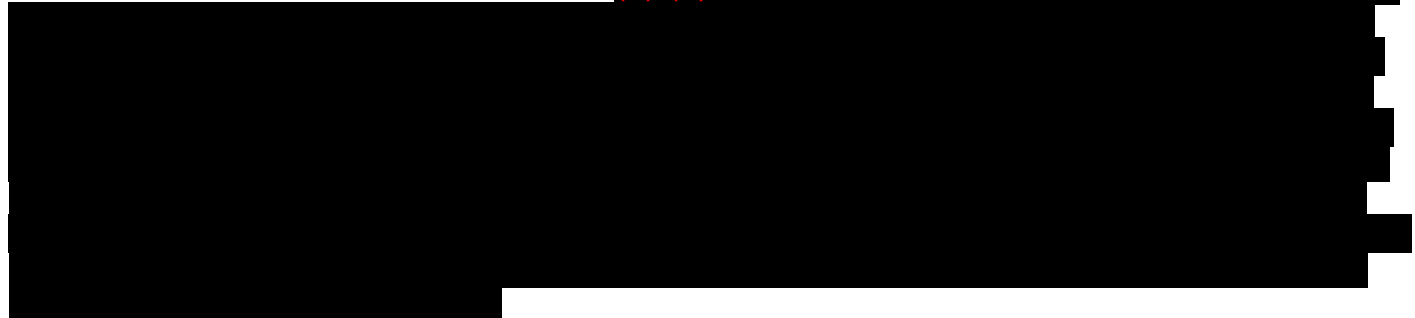

Best,
Tuana Phillips

From: Myers, Karen <karen_myers@fws.gov>
Sent: Thursday, October 21, 2021 5:32 PM
To: Phillips, Tuana <phillips.tuana@epa.gov>
Cc: Korotney, David <korotney.david@epa.gov>; cathy.tortorici@noaa.gov; Keith Paul <keith_paul@fws.gov>; Laye, Doug <Doug_Laye@fws.gov>; David Baldwin - NOAA Federal <david.baldwin@noaa.gov>; Ryan DeWitt <ryan.dewitt@noaa.gov>
Subject: RE: [EXTERNAL] Upcoming ESA TA meeting on RFS, and other updates

Hi Tuana,

Thanks for letting us know.

I did want to also offer some follow-up thoughts (b) (5)

Thanks,

Karen

Karen Myers
Manager, Branch of National Consultations
Ecological Services Program, MS: ES
U.S. Fish and Wildlife Service
5275 Leesburg Pike
Falls Church, VA 22041-3803
(b) (6)

}<:)))))%>

From: Phillips, Tuana <phillips.tuana@epa.gov>
Sent: Thursday, October 14, 2021 1:31 PM
To: cathy.tortorici@noaa.gov; Myers, Karen <karen_myers@fws.gov>; Paul, Keith <keith_paul@fws.gov>; Laye, Doug <Doug_Laye@fws.gov>; David Baldwin - NOAA Federal <david.baldwin@noaa.gov>; Ryan DeWitt <ryan.dewitt@noaa.gov>
Cc: Burch, Julia <Burch.Julia@epa.gov>; Korotney, David <korotney.david@epa.gov>; Miller, Meredith <Miller.Meredith@epa.gov>; Hambright, Rosemary <Hambright.Rosemary.E@epa.gov>; Nelson, Karen <nelson.karen@epa.gov>; Butler, Aron <butler.aron@epa.gov>; Delity, Akshay <Delity.Akshay@epa.gov>; Valderrama, Cristina <Valderrama.Cristina@epa.gov>; Clark, Christopher <clark.christopher@epa.gov>; LeDuc, Stephen <LeDuc.Stephen@epa.gov>; Lamson, Amy <Lamson.Amy@epa.gov>; Burkholder, Dallas <burkholder.dallas@epa.gov>; Nancy Brown-Kobil <nancy.brown-kobil@noaa.gov>; Michaels, Lauren <Michaels.Lauren@epa.gov>; Machiele, Paul <machiele.paul@epa.gov>
Subject: [EXTERNAL] Upcoming ESA TA meeting on RFS, and other updates

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hi Cathy, Karen, Keith, Doug, David, and Ryan,

We have a few updates for you below in bullets. I am also reaching out because our EPA team is proposing to cancel our scheduled meeting on Tuesday (10/19). At this time, we are still working on our analyses and don't have much to discuss with you all. That said, if there is something you'd like to discuss with us then please let us know.

Some updates:

- (b) (5)
- We received a FOIA request from the Center for Biological Diversity requesting records generated in connection to consultations and/or determinations made pursuant to Section 7 of the ESA for the 2021-2022 renewable fuel standards. We are in the process of requesting an extension to reply to this FOIA and as a first step we will be conducting a terms and custodians search to identify records. We may reach out to you if we identify records that were created by you or your agencies, and to determine whether or not they can be shared as part of this FOIA.

Thank you and let us know if you have any questions/thoughts.

Best,
Tuana Phillips
Office of Transportation and Air Quality (OTAQ)
U.S. Environmental Protection Agency

Phone: (202)-565-0074


Pronouns: she/her/hers

From: Myers, Karen
Subject: RE: [EXTERNAL] Upcoming ESA TA meeting on RFS, and other updates
To: Phillips, Tuana
Cc: Korotney, David; cathy.tortorici@noaa.gov; Paul, Keith; Laye, Doug; David Baldwin - NOAA Federal; Ryan DeWitt
Sent: October 21, 2021 5:32 PM (UTC-04:00)

Hi Tuana,

Thanks for letting us know.

I did want to also offer some follow-up thoughts (b) (5)



Thanks,

Karen

Karen Myers
Manager, Branch of National Consultations
Ecological Services Program, MS: ES
U.S. Fish and Wildlife Service
5275 Leesburg Pike
Falls Church, VA 22041-3803
(b) (2)

}<:)))%>

From: Phillips, Tuana <phillips.tuana@epa.gov>
Sent: Thursday, October 14, 2021 1:31 PM
To: cathy.tortorici@noaa.gov; Myers, Karen <karen_myers@fws.gov>; Paul, Keith <keith_paul@fws.gov>; Laye, Doug <Doug_Laye@fws.gov>; David Baldwin - NOAA Federal <david.baldwin@noaa.gov>; Ryan DeWitt <ryan.dewitt@noaa.gov>
Cc: Burch, Julia <Burch.Julia@epa.gov>; Korotney, David <korotney.david@epa.gov>; Miller, Meredith <Miller.Meredith@epa.gov>; Hambright, Rosemary <Hambright.Rosemary.E@epa.gov>; Nelson, Karen <nelson.karen@epa.gov>; Butler, Aron <butler.aron@epa.gov>; Delity, Akshay <Delity.Akshay@epa.gov>; Valderrama, Cristina <Valderrama.Cristina@epa.gov>; Clark, Christopher <clark.christopher@epa.gov>; LeDuc, Stephen <LeDuc.Stephen@epa.gov>; Lamson, Amy <Lamson.Amy@epa.gov>; Burkholder, Dallas <burkholder.dallas@epa.gov>; Nancy Brown-Kobil <nancy.brown-kobil@noaa.gov>; Michaels, Lauren <Michaels.Lauren@epa.gov>; Machiele, Paul <machiele.paul@epa.gov>
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Best,

Tuana Phillips

Office of Transportation and Air Quality (OTAQ)

U.S. Environmental Protection Agency

Phone: (202)-565-0074

Pronouns: she/her/hers

From: David Baldwin - NOAA Federal
Subject: Re: 11/16 Meeting: ESA TA on RFS - NMFS, EPA, FWS
To: Phillips, Tuana
Cc: Cathy Tortorici - NOAA Federal ; Ryan DeWitt - NOAA Federal ; Myers, Karen; Keith Pau
Sent: November 12, 2021 5:09 PM (UTC-05:00)

Tuana,

Thanks for the update on the meeting. I'm interested in hearing details on how EPA is proposing to define the action and the action area. Particularly the criteria used to determine the complete area over which stressors of the action have any potential to impact listed species.

Related to this, NMFS has now completed a collection of GIS files for NMFS species's ranges and habitats. We've almost finished an annotated spreadsheet listing the species as well as a file describing the information. The entire set should be ready before the meeting on Tuesday. The GIS files are too big to email, so an electronic transfer will need to be worked out.

Who would be the appropriate contacts to work with to get the files to EPA and incorporate them into your process?

Sincerely,
David

On Wed, Nov 10, 2021 at 12:53 PM Phillips, Tuana <phillips.tuana@epa.gov> wrote:

Hi Cathy, Karen, Keith, Doug, and David,

We at EPA would like to use our upcoming meeting to share the results of some work that was recently completed by a contractor. The contractor looked at (b) (5) [REDACTED].

I won't be sending an agenda in advance since this will be the focus of our meeting.

Thanks and I hope you all have a nice Veteran's Day holiday.

Best,

Tuana Phillips

Office of Transportation and Air Quality (OTAQ)

U.S. Environmental Protection Agency

Phone: (202)-565-0074

Pronouns: she/her/hers

--

David H. Baldwin, Ph.D.
Biologist (Endangered Species)
NOAA Fisheries
Office of Protected Resources
email: David.Baldwin@noaa.gov
cell: (b) (6)

From: Phillips, Tuana
Subject: 11/16 Meeting: ESA TA on RFS - NMFS, EPA, FWS
To: Burch, Julia; cathy.tortorici@noaa.gov; Karen Myers; Keith Pau; Machiee, Pau; Korotney, David; Miller, Meredith; Hambright, Rosemary; Nelson, Karen; Butler, Aron; Deity, Akshay; Laye, Doug; David Baldwin - NOAA Federal
Cc: Vadderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkholder, Dallas; Nancy Brown-Kobi - NOAA Federal; Michaels, Lauren; Miller, Jesse N.
Sent: November 10, 2021 3:54 PM (UTC-05:00)

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Office of Transportation and Air Quality (OTAQ)

U.S. Environmental Protection Agency

Phone: (202)-565-0074

Pronouns: she/her/hers

From: Buter, Aron
Subject: RE: 11/16 Meeting: ESA TA on RFS - NMFS, EPA, FWS
To: Phillips, Tuana; Burch, Julia; cathy.tortorici@noaa.gov; Karen Myers; Keith Paul; Machiele, Paul; Korotney, David; Miller, Meredith; Hambright, Rosemary; Nelson, Karen; Delity, Akshay; Laye, Doug; David Baldwin - NOAA Federal
Cc: Valderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkholder, Dallas; Nancy Brown-Kobil - NOAA Federal; Michaels, Lauren; Miller, Jesse N.
Sent: November 16, 2021 12:30 PM (UTC-05:00)
Attached: BBD impacts background discussion 20211116.pptx

Hello all Attached are the slides we plan to use in today's discussion that Tuana described below. I will be showing these via Teams, but wanted to make sure everyone had access.

Let me know any questions or concerns.

Thanks,
Aron

Aron Buter
Fuels Center / Assessment and Standards Division
USEPA Office of Transportation and Air Quality
Phone (734) 214 4011 / buter.aron@epa.gov

From: Phillips, Tuana <phillips.tuana@epa.gov>
Sent: Wednesday, November 10, 2021 3:54 PM
To: Burch, Julia <Burch.Julia@epa.gov>; cathy.tortorici@noaa.gov; Karen Myers <karen_myers@fws.gov>; Keith Paul <keith_paul@fws.gov>; Machiele, Paul <machiele.paul@epa.gov>; Korotney, David <korotney.david@epa.gov>; Miller, Meredith <Miller.Meredith@epa.gov>; Hambright, Rosemary <Hambright.Rosemary.E@epa.gov>; Nelson, Karen <nelson.karen@epa.gov>; Butler, Aron <butler.aron@epa.gov>; Delity, Akshay <Delity.Akshay@epa.gov>; Laye, Doug <Doug_Laye@fws.gov>; David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Cc: Valderrama, Cristina <Valderrama.Cristina@epa.gov>; Clark, Christopher <Clark.Christopher@epa.gov>; LeDuc, Stephen <LeDuc.Stephen@epa.gov>; Lamson, Amy <Lamson.Amy@epa.gov>; Burkholder, Dallas <burkholder.dallas@epa.gov>; Nancy Brown-Kobil - NOAA Federal <nancy.brown-kobil@noaa.gov>; Michaels, Lauren <Michaels.Lauren@epa.gov>; Miller, Jesse N. <Miller.Jesse.N@epa.gov>
Subject: 11/16 Meeting: ESA TA on RFS - NMFS, EPA, FWS

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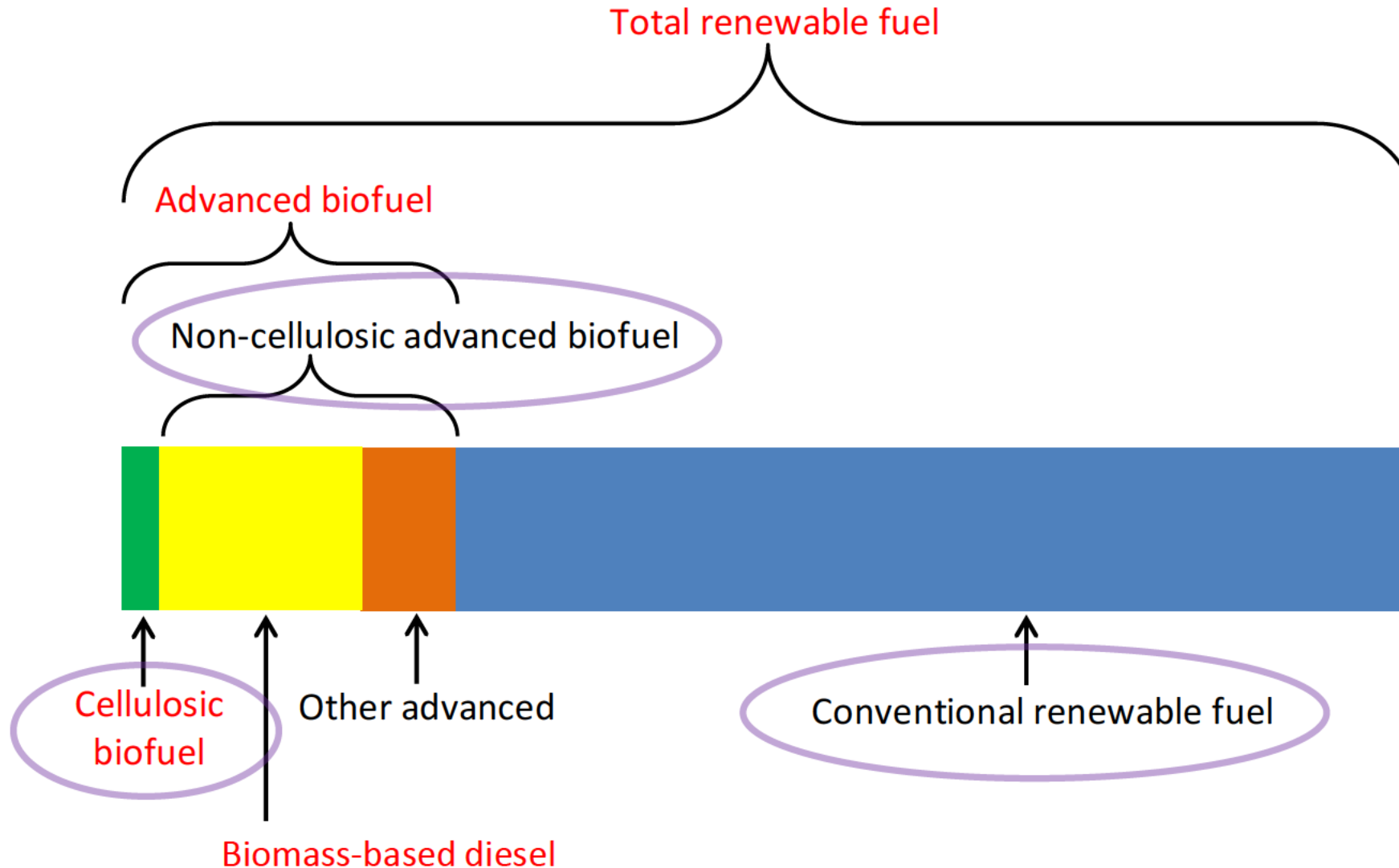
Background Discussion for RFS Biofuel Impacts on Habitats

11/16/2021

Outline

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RFS Biofuel Categories



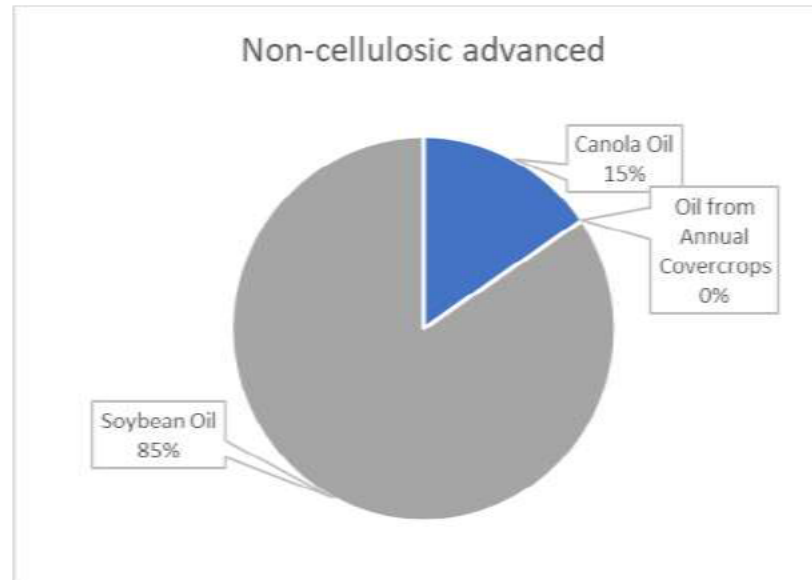
Items in red are the nested standards in the statute

Items in black are disaggregated categories that are often useful

Circled items are the ones that we often focus on

Average Proportions 2016-2020

	Cellulosic	Non-cellulosic advanced	Conventional
Domestic, crop-based	1%	42%	98% corn
Domestic, non-crop-based	89%	34%	0%
Imports crop-based	0%	12%	2%
Imports, non-crop-based	10%	11%	0%



Draft deliberative - Not for public release

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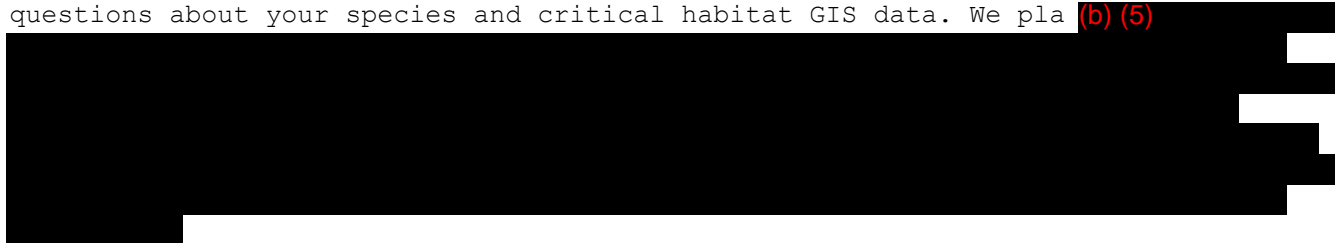
(b) (5)

(b) (5)

From: Phillips, Tuana
Subject: Canceled: ESA TA on RFS - NMFS, EPA, FWS
To: Burch, Julia; cathy.tortorici@noaa.gov; Karen Myers; Keith Paul; Machiele, Paul; Korotney, David; Miller, Meredith; Hambright, Rosemary; Nelson, Karen; Butler, Aron; Delity, Akshay; Laye, Doug; David Baldwin - NOAA Federal; Miller, Jesse N.
Cc: Valderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkholder, Dallas; Nancy Brown-Kobil - NOAA Federal; Michaels, Lauren
Sent: January 11, 2022 9:26 AM (UTC-05:00)

Hi all,

I hope you all were able to enjoy some time off during the holidays. I am canceling today's meeting because we are still working on things and not quite ready to bring them to you. I will be reaching out to some of you separately as I have some questions about your species and critical habitat GIS data. We pla (b) (5)



Best,
Tuana

Please accept this invitation as I am taking over from Julia as the primary POC for these meetings. Julia will cancel the calendar invitations that she has sent.


As discussed, trying to establish a regular schedule for these meetings but we can tweak this timing if needed.

Materials will be distributed prior to the meetings.

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.microsoft.com/556a4b78-4afd-4fe6-b721-1d903e8cdaa6?id=290372615> | Reset

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options<https://teams.microsoft.com/meetingOptions/?organizerId=5a749786-198a-4dc2-a399-04dlbe0fc617&tenantId=88b378b3-6748-4867-acf9-76aacbeca6a7&threadId=19_meeting_MDQ0ZjBhMTQzMjhkNC00OGEwLTk5ZDYtZDRiMDBmMzZhMjky@tthread.v2&messageId=0&language=en-US>

From: Phillips, Tuana
Subject: ESA TA on RFS - NMFS, EPA, FWS
To: Burch, Julia; cathy.tortorici@noaa.gov; Karen Myers; Keith Paul; Machiele, Paul; Korotney, David; Miller, Meredith; Hambright, Rosemary; Nelson, Karen; Butler, Aron; Delity, Akshay; Laye, Doug; David Baldwin - NOAA Federal; Miller, Jesse N.
Cc: Valderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkholder, Dallas; Nancy Brown-Kobil - NOAA Federal; Michaels, Lauren
Sent: January 25, 2022 10:41 AM (UTC-05:00)
Attached: ESA TA Meeting_01.25.22_Presentation.pptx

Update

Attached is a presentation we will be going over during our call today.

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[REDACTED] | Reset

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options<[https://teams.microsoft.com/meetingOptions/?organizerId=5a749786-198a-4dc2-a399-04d1be0fc617&tenantId=88b378b3-6748-4867-acf9-](https://teams.microsoft.com/meetingOptions/?organizerId=5a749786-198a-4dc2-a399-04d1be0fc617&tenantId=88b378b3-6748-4867-acf9-76aacbeca6a7&threadId=19_meeting_MDQ0ZjBhMTQtMjhkNC00OGEwLTk5ZDYtZDRiMDBmMzZhMjky@t)

76aacbeca6a7&threadId=19_meeting_MDQ0ZjBhMTQtMjhkNC00OGEwLTk5ZDYtZDRiMDBmMzZhMjky@t
hread.v2&messageId=0&language=en-US>

ESA Technical Assistance Meeting on RFS

01/25/2022



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(b) (5)

Thank you

We appreciate your feedback and thoughts at this time.

(b) (5)

From: Phillips, Tuana
Subject: ESA TA on RFS - NMFS, EPA, FWS
To: Burch, Julia; cathy.tortorici@noaa.gov; Karen Myers; Keith Paul; Machiele, Paul; Korotney, David; Miller, Meredith; Kaban, Rosemary; Nelson, Karen; Butler, Aron; Delity, Akshay; Laye, Doug; David Baldwin - NOAA Federal; Miller, Jesse N.
Cc: Valderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkholder, Dallas; Nancy Brown-Kobil - NOAA Federal; Michaels, Lauren; Schillo, Bruce
Sent: February 22, 2022 11:04 AM (UTC-05:00)

Hello all,

Here is an agenda for our call at 1 PM today:

Agenda:

- * Brief update on our work to complete a first draft of the Biological Evaluation
- * Update on the RVO Rule and overview of comments received
- * Plan for addressing ESA in the RVO Rule
- * Discussion on recent publication by Lark et al.

Please accept this invitation as I am taking over from Julia as the primary POC for these meetings. Julia will cancel the calendar invitations that she has sent.

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(b) (6)



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options<https://teams.microsoft.com/meetingOptions/?organizerId=5a749786-198a-4dc2-a399-04d1be0fc617&tenantId=88b378b3-6748-4867-acf9-76aacbeca6a7&threadId=19_meeting_MDQ0ZjBhMTQtMjhkNC00OGEwLTk5ZDYtZDRiMDBmMzZhMjky@thread.v2&messageId=0&language=en-US>

From: Korotney, David
Subject: Table for 1pm discussion
To: Burch, Julia; cathy.tortorici@noaa.gov; Karen Myers; Keith Pau; Machiee, Pau; Miller, Meredith; Hambright, Rosemary; Bhandar, Gurbakhash S.; Nelson, Karen; Butler, Aron; Deity, Akshay; Laye, Doug; David Baldwin - NOAA Federal; Phillips, Tuana
Cc: Vadderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkholder, Dallas; Nancy Brown-Kobi - NOAA Federal
Sent: July 27, 2021 7:51 AM (UTC-04:00)
Attached: Actions.docx

We'll use the attached as a reference for part of our discussion at 1:00pm today. Raj will also be sharing some graphs on historical ethanol and corn production.

(b) (5)

From: David Baldwin - NOAA Federal
Subject: Re: Threatened and endangered species, critical habitat spatial data
To: Phillips, Tuana
Cc: Cathy Tortorici - NOAA Federal ; Ryan DeWitt - NOAA Federal
Sent: October 4, 2021 9:14 PM (UTC-04:00)

Tuana,

NMFS does not have a ready single source of current GIS info for species. Rather than have EPA track the info down, we'll gather updated GIS files and do a QA/QC before sending them to EPA. In addition, we'll highlight listed species based on their proximity to cultivated lands in the lower 48 states.

We anticipate this being done in the next few weeks. I'm going on leave for the next two weeks. If you have questions in the meantime, you can contact Ryan DeWitt (cc'd). We could look at sending GIS files piecemeal if you would benefit by having some sooner.

Sincerely,
David

On Thu, Sep 30, 2021 at 7:46 AM Phillips, Tuana <phillips.tuana@epa.gov> wrote:

Good morning Cathy, Karen, Keith, Doug, and David,

We are looking for GIS data showing nationwide listed species and critical habitat. Are the below websites where we should go for the most up-to-date information, or are there other websites/resources we should use? I realize that IPaC allows you to upload GIS shapefiles but it looks like our data layers are too large and cannot be uploaded.

<https://ecos.fws.gov/ecp/report/table/critical-habitat.html>

<https://www.fisheries.noaa.gov/national/endangered-species-conservation/critical-habitat>

Thank you,

Tuana Phillips

Office of Transportation and Air Quality (OTAQ)

U.S. Environmental Protection Agency

Phone: (202)-565-0074

Pronouns: she/her/hers

--

David H. Baldwin, Ph.D.
Biologist (Endangered Species)

NOAA Fisheries
Office of Protected Resources
email: David.Baldwin@noaa.gov
cell: (b) (6)

From: Phi ips, Tuana
Subject: Threatened and endangered species, critica habitat spatia data
To: cathy.tortorici@noaa.gov; Karen Myers; Keith Pau ; Machie e, Pau ; Laye, Doug; David Ba dwin - NOAA Federa
Cc: Burch, Ju ia; Korotney, David; Mi er, Meredith; Hambright, Rosemary; Ne son, Karen; Buter, Aron; De ity, Akshay; Va derrama, Cristina; C ark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkho der, Da as; Nancy Brown-Kobi - NOAA Federa ; Michae s, Lauren
Sent: September 30, 2021 10:46 AM (UTC-04:00)

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Thank you,

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Office of Transportation and Air Quality (OTAQ)

U.S. Environmental Protection Agency

Phone: (202)-565-0074

Pronouns: she/her/hers

From: Phi ips, Tuana
Subject: RE: Threatened and endangered species, critica habitat spatia data
To: David Baldwin - NOAA Federa
Cc: cathy.tortorici@noaa.gov; Ryan DeWitt
Sent: October 5, 2021 8:47 AM (UTC-04:00)

Hi David,

That would be fantastic and very helpful! I don't know if you'll be on the call later today, or if you're already gone for your two weeks of leave, but I will be going over what I am thinking and what I have looked at so far using the US FWS data and using South Dakota as an example.

In terms of timing, I think it is fine if this is done in the next few weeks. It is going to take me some time to continue thinking about and analyzing the Cropland Data Layer and US FWS GIS files anyway.

Best,
Tuana

From: David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Sent: Monday, October 4, 2021 9:14 PM
To: Phillips, Tuana <phillips.tuana@epa.gov>
Cc: cathy.tortorici@noaa.gov; Ryan DeWitt <ryan.dewitt@noaa.gov>
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<https://www.fisheries.noaa.gov/national/endangered-species-conservation/critical-habitat>

Thank you,

Tuana Phillips

Office of Transportation and Air Quality (OTAQ)

U.S. Environmental Protection Agency

Phone: (202)-565-0074

Pronouns: she/her/hers

--

David H. Baldwin, Ph.D.
Biologist (Endangered Species)
NOAA Fisheries
Office of Protected Resources
email: David.Baldwin@noaa.gov
cell: (b) (6)

From: Pau, Keith
Subject: Re: [EXTERNAL] Threatened and endangered species, critica habitat spatia data
To: Phi ips, Tuana; cathy.tortorici@noaa.gov; Myers, Karen; Machie e, Pau; Laye, Doug; David Ba dwin - NOAA Federa
Cc: Burch, Ju ia; Korotney, David; Mi er, Meredith; Hambright, Rosemary; Ne son, Karen; Buter, Aron; De ity, Akshay; Va derrama, Cristina; C ark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkho der, Da as; Nancy Brown-Kobi ; Michael s, Lauren
Sent: September 30, 2021 11:55 AM (UTC-04:00)
Hi Tuana,

For FWS listed species, you can use this

link: https://ecos.fws.gov/docs/species/shapefiles/usfws_complete_species_current_range.zip

This will provide shapefiles for all species in ECOS (listed, proposed, candidate and others) but you should be able to export the species you need based on status.

The critical habitat link that you have is the correct link.

Keith

Keith A Paul
U.S. Fish and Wildlife Service Headquarters
Ecologica Services, MS: ES
5275 Leesburg Pike
Fa s Church, VA 22041-3803
Phone: (b) (6)

From: Phillips, Tuana <phillips.tuana@epa.gov>
Sent: Thursday, September 30, 2021 10:46 AM
To: cathy.tortorici@noaa.gov <cathy.tortorici@noaa.gov>; Myers, Karen <karen_myers@fws.gov>; Paul, Keith <keith_paul@fws.gov>; Machiele, Paul <machiele.paul@epa.gov>; Laye, Doug <Doug_Laye@fws.gov>; David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Cc: Burch, Julia <Burch.Julia@epa.gov>; Korotney, David <korotney.david@epa.gov>; Miller, Meredith <Miller.Meredith@epa.gov>; Hambright, Rosemary <Hambright.Rosemary.E@epa.gov>; Nelson, Karen <nelson.karen@epa.gov>; Butler, Aron <butler.aron@epa.gov>; Delity, Akshay <Delity.Akshay@epa.gov>; Valderrama, Cristina <Valderrama.Cristina@epa.gov>; Clark, Christopher <clark.christopher@epa.gov>; LeDuc, Stephen <LeDuc.Stephen@epa.gov>; Lamson, Amy <Lamson.Amy@epa.gov>; Burkholder, Dallas <burkholder.dallas@epa.gov>; Nancy Brown-Kobil <nancy.brown-kobil@noaa.gov>; Michaels, Lauren <Michaels.Lauren@epa.gov>
Subject: [EXTERNAL] Threatened and endangered species, critical habitat spatial data

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Good morning Cathy, Karen, Keith, Doug, and David,

We are looking for GIS data showing nationwide listed species and critical habitat. Are the below websites where we should go for the most up-to-date information, or are there other websites/resources we should use? I realize that IPaC allows you to upload GIS shapefiles but it looks like our data layers are too large and cannot be uploaded.

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<https://www.fisheries.noaa.gov/national/endangered-species-conservation/critical-habitat>

Thank you,

Tuana Phillips

Office of Transportation and Air Quality (OTAQ)

U.S. Environmental Protection Agency

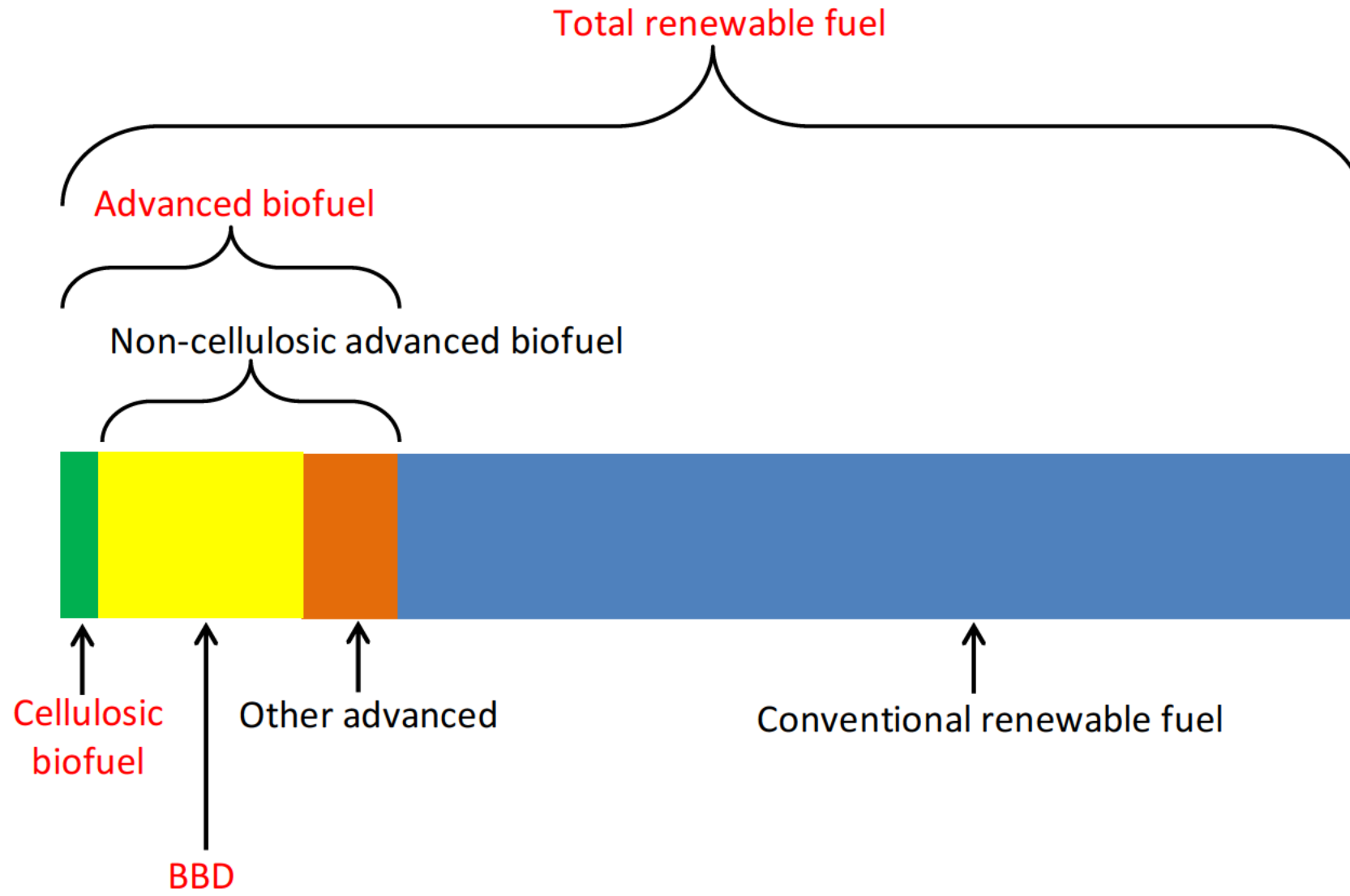
Phone: (202)-565-0074

Pronouns: she/her/hers

From: Korotney, David
Subject: Sides from today
To: Phillips, Tuana; Burch, Julia; cathy.tortorici@noaa.gov; Karen Myers; Keith Pau; Machiee, Pau; Miller, Meredith; Hambright, Rosemary; Nelson, Karen; Butler, Aron; Deity, Akshay; Laye, Doug; David Baldwin - NOAA Federal
Cc: Vadderrama, Cristina; Clark, Christopher; LeDuc, Stephen; Lamson, Amy; Burkholder, Dallas; Michaels, Lauren; Ryan DeWitt; Nancy Brown-Kobi - NOAA Federal
Sent: October 5, 2021 1:25 PM (UTC-04:00)
Attached: (b) (5)

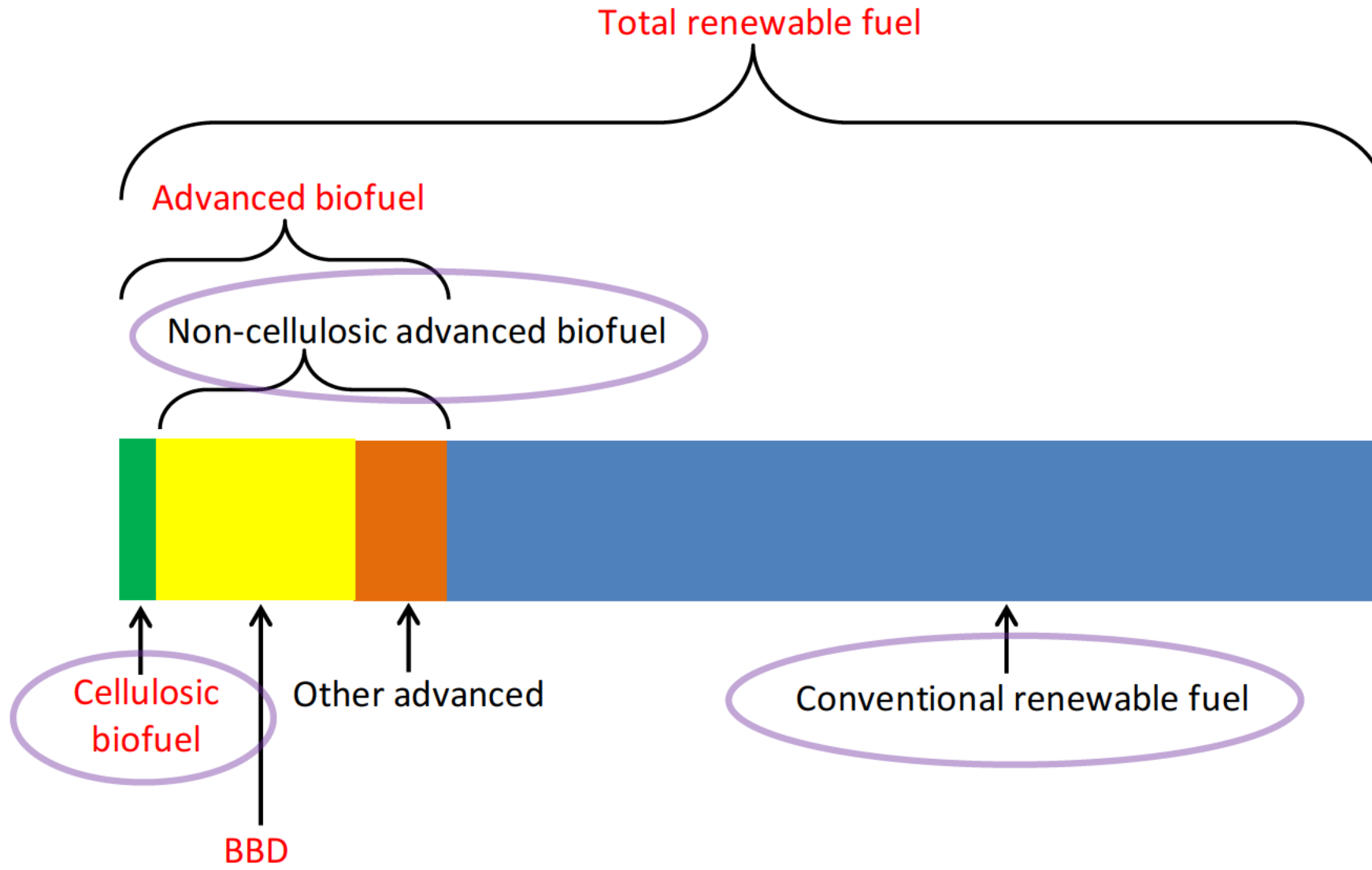
Attached are the slides that I went through today.

(b) (5)



Items in red are the nested standards in the statute

Items in black are disaggregated categories that are often useful

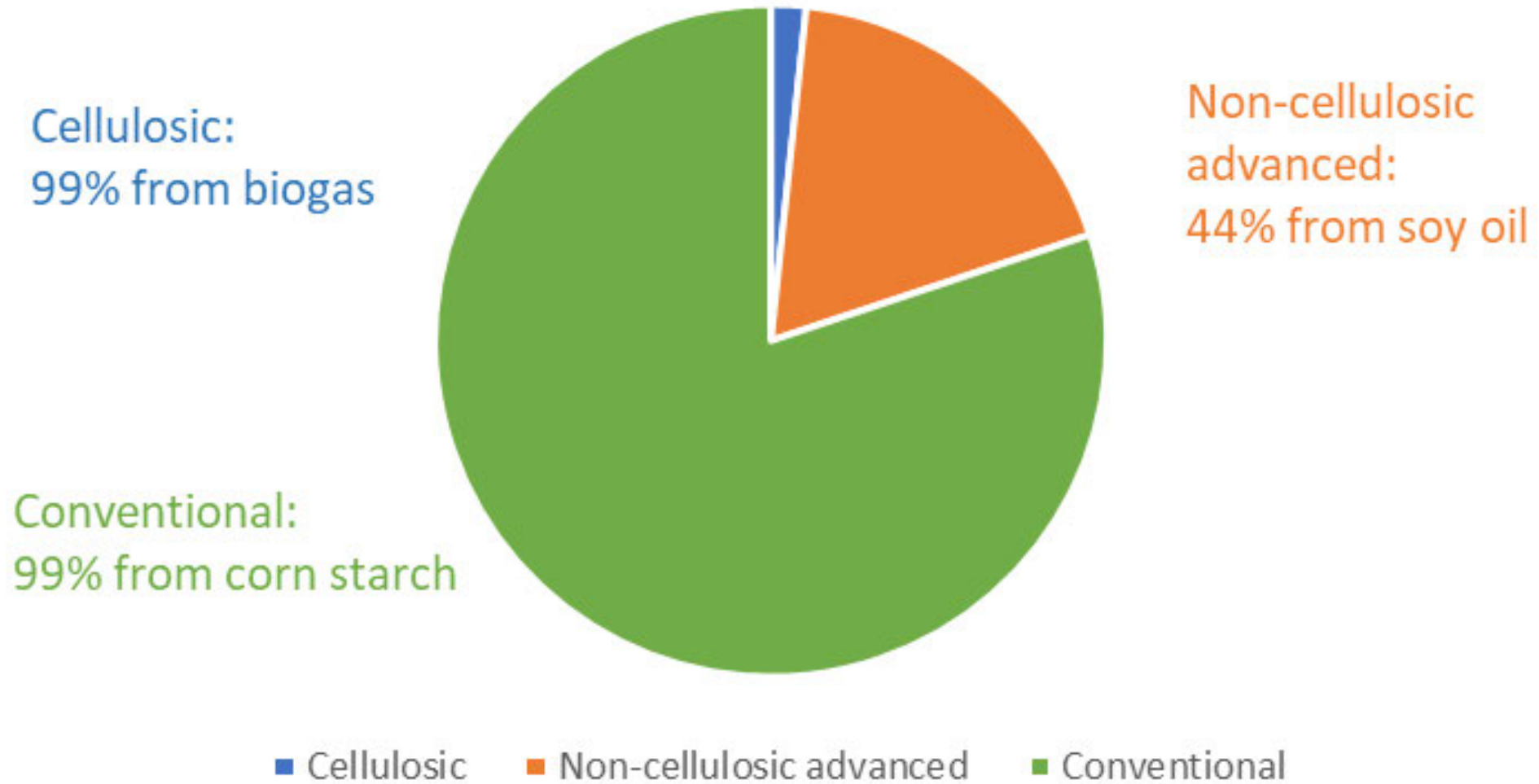


Items in red are the nested standards in the statute

Items in black are disaggregated categories that are often useful

Circled items are the ones that we often focus on

Average proportions for 2016 - 2020



In estimating potential impacts on species and habitat, the primary biofuels of interest are those that are produced from domestically-grown crops

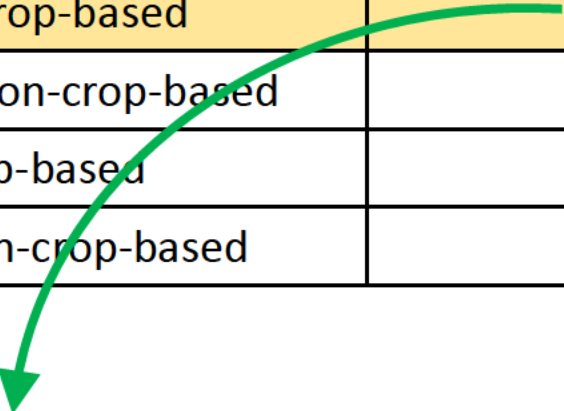
- Fuels produced from non-crop feedstocks (e.g. waste restaurant grease or agricultural waste) are much less likely to impact species or habitat
- Imported feedstocks or biofuels have their primary impacts outside of the U.S.
- (b) (5) [REDACTED]
[REDACTED]
[REDACTED]

Average proportions for 2016 - 2020

	Cellulosic	Non-cellulosic advanced	Conventional
Domestic, crop-based	1%	42%	98%
Domestic, non-crop-based	89%	34%	0%
Imports crop-based	0%	12%	2%
Imports, non-crop-based	10%	11%	0%

Average proportions for 2016 - 2020

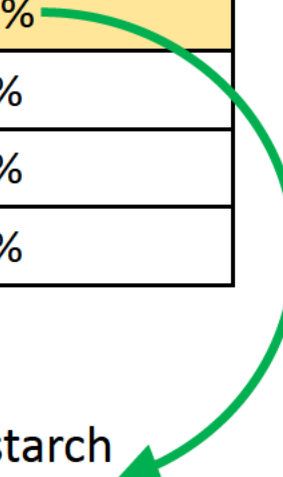
	Cellulosic	Non-cellulosic advanced	Conventional
Domestic, crop-based	1%	42%	98%
Domestic, non-crop-based	89%	34%	0%
Imports crop-based	0%	12%	2%
Imports, non-crop-based	10%	11%	0%



100% covercrops

Average proportions for 2016 - 2020

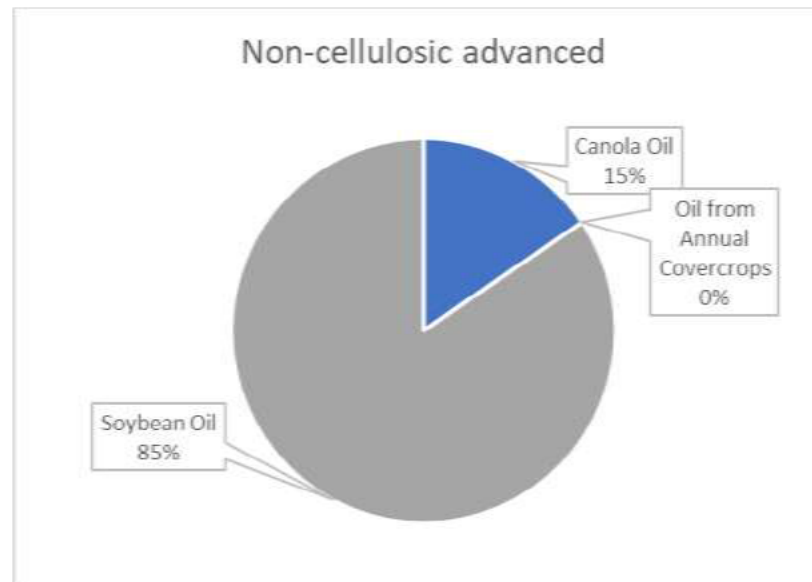
	Cellulosic	Non-cellulosic advanced	Conventional
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Domestic, non-crop-based	89%	34%	0%
Imports crop-based	0%	12%	2%
Imports, non-crop-based	10%	11%	0%



99% corn starch
1% grain sorghum

Average proportions for 2016 - 2020

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(b) (5)

From: Ryan DeWitt - NOAA Federa
Subject: Re: Threatened and endangered species, critica habitat spatia data
To: Phi ips, Tuana
Cc: David Ba dwin - NOAA Federa ; cathy.tortorici@noaa.gov
Sent: October 14, 2021 1:49 PM (UTC-04:00)

Hi Tuana,

Thanks for the update. Yes, we are happy to assist by providing GIS data for NMFS species. I believe that the timeline you mentioned (2-3 weeks) will be enough to compile that information.

Thank you,
Ryan

On Thu, Oct 14, 2021 at 10:34 AM Phillips, Tuana <phillips.tuana@epa.gov> wrote:

Hi David and all,

I am writing to confirm that you all will be able to help with the NMFS GIS analysis. Your help would be very much appreciated! I am still working through the action area analysis and FWS GIS files. It will probably take me another two weeks or so to complete. So if you could produce the GIS files and analysis you suggested in your original email by sometime in the next 2-3 weeks, that would be fine.

Thank you very much,

Tuana Phillips

From: Phillips, Tuana
Sent: Tuesday, October 5, 2021 8:47 AM
To: David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Cc: cathy.tortorici@noaa.gov; Ryan DeWitt <ryan.dewitt@noaa.gov>
Subject: RE: Threatened and endangered species, critical habitat spatial data

Hi David,

That would be fantastic and very helpful! I don't know if you'll be on the call later today, or if you're already gone for your two weeks of leave, but I will be going over what I am thinking and what I have looked at so far using the US FWS data and using South Dakota as an example.

In terms of timing, I think it is fine if this is done in the next few weeks. It is going to take me some time to continue thinking about and analyzing the Cropland Data Layer and US FWS GIS files anyway.

Best,

Tuana

From: David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Sent: Monday, October 4, 2021 9:14 PM
To: Phillips, Tuana <phillips.tuana@epa.gov>
Cc: cathy.tortorici@noaa.gov; Ryan DeWitt <ryan.dewitt@noaa.gov>
Subject: Re: Threatened and endangered species, critical habitat spatial data

Tuana,

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Sincerely,

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Pronouns: she/her/hers

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David H. Baldwin, Ph.D.

Biologist (Endangered Species)

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email: David.Baldwin@noaa.gov

cell: (b) (6)

--

Ryan DeWitt

National Marine Fisheries Service

Office of Protected Resources

Telephone: (b) (6)

ryan.dewitt@noaa.gov

From: Phi ips, Tuana
Subject: RE: Threatened and endangered species, critica habitat spatia data
To: David Ba dwin - NOAA Federa
Cc: cathy.tortorici@noaa.gov; Ryan DeWitt
Sent: October 14, 2021 1:35 PM (UTC-04:00)

Hi David and all,

I am writing to confirm that you all will be able to help with the NMFS GIS analysis. Your help would be very much appreciated! I am still working through the action area analysis and FWS GIS files. It will probably take me another two weeks or so to complete. So if you could produce the GIS files and analysis you suggested in your original email by sometime in the next 2-3 weeks, that would be fine.

Thank you very much,
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Cc: cathy.tortorici@noaa.gov; Ryan DeWitt <ryan.dewitt@noaa.gov>
Subject: RE: Threatened and endangered species, critical habitat spatial data

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Office of Transportation and Air Quality (OTAQ)

U.S. Environmental Protection Agency

Phone: (202)-565-0074

Pronouns: she/her/hers

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David H. Baldwin, Ph.D.

Biologist (Endangered Species)

NOAA Fisheries

Office of Protected Resources

email: David.Baldwin@noaa.gov

cell: (b) (6)

From: Phi ips, Tuana
Subject: RE: Threatened and endangered species, critica habitat spatia data
To: Ryan DeWitt
Cc: David Baldwin - NOAA Federa ; cathy.tortorici@noaa.gov
Sent: October 14, 2021 1:54 PM (UTC-04:00)

Wonderful, thank you!

From: Ryan DeWitt - NOAA Federal <ryan.dewitt@noaa.gov>
Sent: Thursday, October 14, 2021 1:49 PM
To: Phillips, Tuana <phillips.tuana@epa.gov>
Cc: David Baldwin - NOAA Federal <david.baldwin@noaa.gov>; cathy.tortorici@noaa.gov
Subject: Re: Threatened and endangered species, critical habitat spatial data

Hi Tuana,

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Phone: (202)-565-0074

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David H. Baldwin, Ph.D.

Biologist (Endangered Species)

NOAA Fisheries

Office of Protected Resources

email: David.Baldwin@noaa.gov

cell: (b) (6)

--

Ryan DeWitt

National Marine Fisheries Service

Office of Protected Resources

Telephone: (b) (6)

ryan.dewitt@noaa.gov

From: Ryan DeWitt - NOAA Federa
Subject: Re: NMFS Species Info
To: Phi ips, Tuana
Cc: David Baldwin - NOAA Federa
Sent: November 16, 2021 3:24 PM (UTC-05:00)

Hi Tuana,

I have had some difficulty with sharepoint in the past. Instead, I am going to try sending you a zipped file via Kitworks. In order to open the message you will have to create an account, but my understanding is that it s a simple process and that the message will contain instructions for doing so.

Let me know if you have any problems getting the files. And of course, feel free to reach out to myself or David with any follow-up questions about the spatial data itself.

Thanks!
Ryan

On Tue, Nov 16, 2021 at 9:26 AM Phillips, Tuana <phillips.tuana@epa.gov> wrote:

Hi David,

This is great, thank you very much for putting this together. I am the person on the EPA team who has been completing the GIS analyses, so you can share the files directly with me. Would it work if you transferred them using SharePoint?

Apologies for the delay in my response, I have been out recently and am still catching up on email. But to answer the question in your previous email, we are still working on the action area analysis and criteria. We were hoping to have that done by now, but I am sure you can relate to the fact that things always take much longer than you expect them to. Some of our time has been consumed with the contractor work that we are talking about today. We plan to discuss and share an update on the action area work with you all at a future meeting.

Best,

Tuana

From: David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
Sent: Monday, November 15, 2021 6:43 PM
To: Phillips, Tuana <phillips.tuana@epa.gov>
Cc: cathy.tortorici@noaa.gov; Ryan DeWitt <ryan.dewitt@noaa.gov>; Karen Myers <karen_myers@fws.gov>
Subject: NMFS Species Info

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Sincerely,

David

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David H. Baldwin, Ph.D.

Biologist (Endangered Species)

NOAA Fisheries

Office of Protected Resources

email: David.Baldwin@noaa.gov

cell: (b) (6)

--

Ryan DeWitt

National Marine Fisheries Service

Office of Protected Resources

Telephone: (b) (6)

ryan.dewitt@noaa.gov

From: Phi ips, Tuana
Subject: RE: NMFS Species Info
To: David Baldwin - NOAA Federal
Cc: cathy.tortorici@noaa.gov; Ryan DeWitt; Karen Myers
Sent: November 16, 2021 12:27 PM (UTC-05:00)

Hi David,

This is great, thank you very much for putting this together. I am the person on the EPA team who has been completing the GIS analyses, so you can share the files directly with me. Would it work if you transferred them using SharePoint?

Apologies for the delay in my response, I have been out recently and am still catching up on email. But to answer the question in your previous email, we are still working on the action area analysis and criteria. We were hoping to have that done by now, but I am sure you can relate to the fact that things always take much longer than you expect them to. Some of our time has been consumed with the contractor work that we are talking about today. We plan to discuss and share an update on the action area work with you all at a future meeting.

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Cc: cathy.tortorici@noaa.gov; Ryan DeWitt <ryan.dewitt@noaa.gov>; Karen Myers <karen_myers@fws.gov>
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David

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Office of Protected Resources
email: David.Baldwin@noaa.gov
cell: (b) (6)

From: Phi ips, Tuana
Subject: RE: NMFS Species Info
To: Ryan DeWitt
Cc: David Badwin - NOAA Federa
Sent: January 11, 2022 10:00 AM (UTC-05:00)

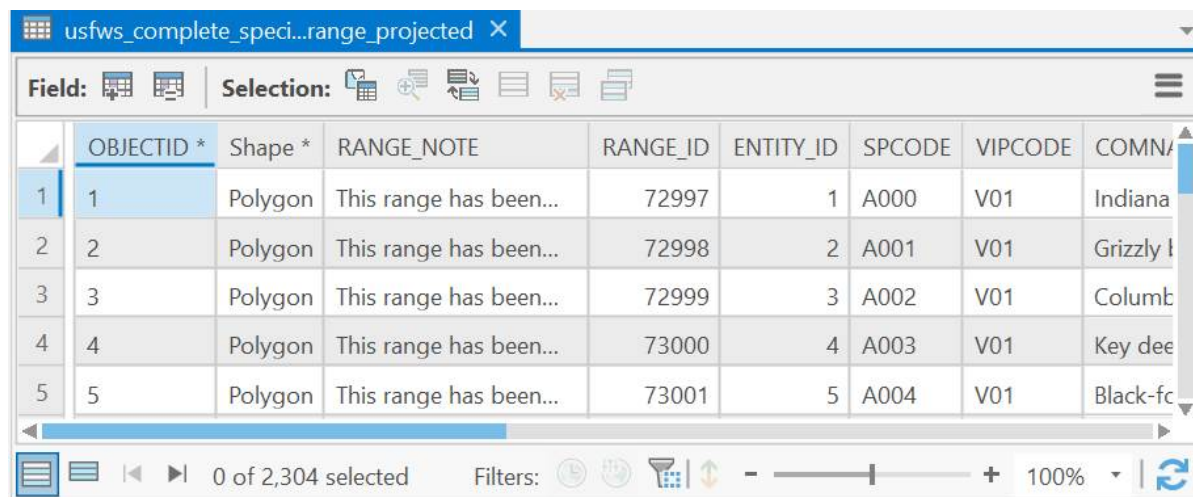
Hi Ryan and David,

Thanks again for compiling and sending over the NMFS species data. I was able to download with no problems. I do have one question. I was working with the FWS data first and I noticed that, in addition to providing the individual species/CH data layers, FWS also provides the data altogether as one merged data layer/shapefile. They do this for the species range, critical habitat line data, and critical habitat polygon data. I pasted screenshots of all three below. The species range data, for example, contains the attributes for the individual 2,304 range ids as individual rows in one shapefile. That means when I am running an intersect or other analysis with the action area I can do it with this one layer/shapefile with all of the range IDs as opposed to running it for each individual range id. As you can imagine, this saves quite a bit of time.

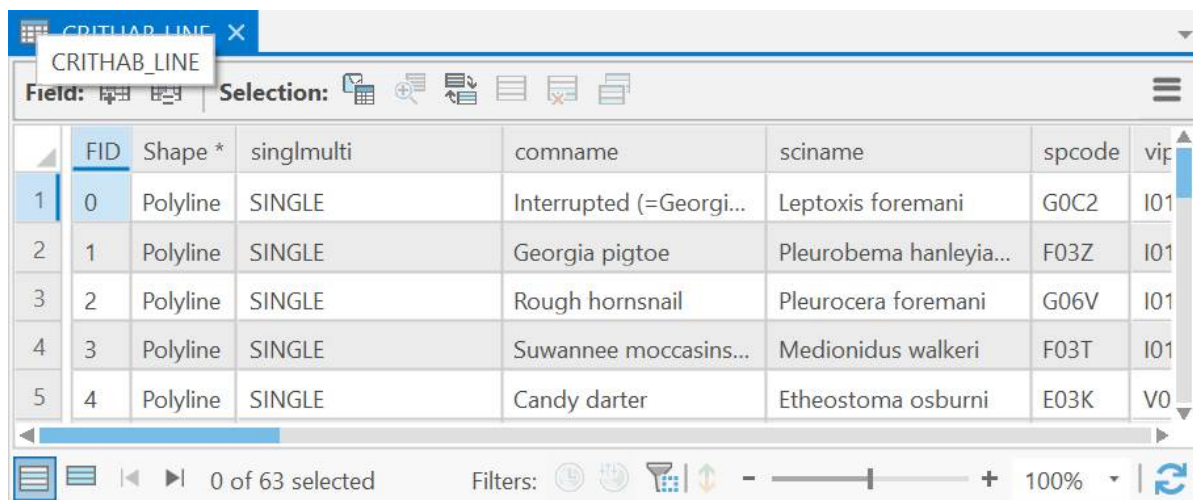
My question is, looking at the NMFS data it looks like you all provided the individual species/CH/HUC data layers. Did you all happen to combine/merge into one or more layers, similar to what FWS did? If not, I think it would be helpful and we can certainly work to do this, you all don't seem to have nearly as much data as FWS so hopefully it won't take long. But I wanted to double check with you before we take the time to do this.

Thanks! Happy to chat on the phone if the above does not make sense.

Tuana



	OBJECTID *	Shape *	RANGE_NOTE	RANGE_ID	ENTITY_ID	SPCODE	VIPCODE	COMNA
1	1	Polygon	This range has been...	72997	1	A000	V01	Indiana
2	2	Polygon	This range has been...	72998	2	A001	V01	Grizzly l
3	3	Polygon	This range has been...	72999	3	A002	V01	Columb
4	4	Polygon	This range has been...	73000	4	A003	V01	Key dee
5	5	Polygon	This range has been...	73001	5	A004	V01	Black-fc



	FID	Shape *	singlmulti	comname	sciname	spcode	vip
1	0	Polyline	SINGLE	Interrupted (=Georgi...	Leptoxis foremani	G0C2	I01
2	1	Polyline	SINGLE	Georgia pigtoe	Pleurobema hanleyia...	F03Z	I01
3	2	Polyline	SINGLE	Rough hornsnail	Pleurocera foremani	G06V	I01
4	3	Polyline	SINGLE	Suwannee moccasins...	Medionidus walkeri	F03T	I01
5	4	Polyline	SINGLE	Candy darter	Etheostoma osburni	E03K	V0

CRITHAB_POLY							
Field:		Selection:					
	FID	Shape *	singlmulti	comname	sciname	spcode	vip
1	0	Polygon	SINGLE	Atlantic salmon	Salmo salar	E07L	V0
2	1	Polygon	SINGLE	Hawaiian picture-win...	Drosophila montgo...	I0R0	I0
3	2	Polygon	SINGLE	Florida bonneted bat	Eumops floridanus	A0JB	V0
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Cc: David Baldwin - NOAA Federal <david.baldwin@noaa.gov>
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cell: (b) (6)

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Telephone: (b) (6)
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From: Ryan DeWitt - NOAA Federa
Subject: Re: NMFS Species Info
To: Phi ips, Tuana
Cc: David Badwin - NOAA Federa
Sent: January 11, 2022 11:22 AM (UTC-05:00)

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From: Phi ips, Tuana
Subject: RE: NMFS Species Info
To: David Baldwin - NOAA Federal ; Ryan DeWitt
Sent: January 11, 2022 12:47 PM (UTC-05:00)

Thank you, Ryan and David. It makes sense that your agency's data is scattered and managed by different regions. Yes, scripting/python I think would be the right next step. We have some folks in OTAQ who have this skillset, so I think we will start there but good point about OPP/EFED, I'll keep that in mind and will reach out to them if needed.

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